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STATE PEDIATRIC SOCIETIES*

W. A. MULHERIN, M.D.
AUGUSTA, GA.

Today the human mind visualizes life and its activities in a large way; circumscribed and timorous ideas are being relegated to the past.

Massive production in commercial, industrial and financial circles is the order of the day. The medical profession, I am happy to say, is beginning to accept and develop its opportunities along medical lines in like manner.

The more important and representative an organization is, the more responsibility does it carry. This process of equalization between honors and responsibilities is well established, in matters of equity. If the members of the human race elevate to leadership an individual or an organization, they expect that individual or organization to blaze the way along certain definite lines of progress.

The medical profession of America has been organized into one composite national organization, known as the American Medical Association. It represents organized medicine in America and is so recognized by the medical profession. This section is an integral part of that association; therefore it is expected that it will assume leadership in matters pertaining to the general policies affecting pediatric practice in America, and the advancement and dissemination of knowledge concerning health and illness of infants and children. We, the members of this section, should gladly and seriously accept such responsibility and fully measure up to it, in every way.

This section has a glorious record of past achievements, a record of which every member should justly feel proud. Our predecessors have labored well; let us endeavor to emulate their example by carrying on in a manner commensurate with their excellent accomplishments.

Any medical organization that is marking time today is truly retrogressing. Altruism, while not in a flourishing condition in America, is far from being extinct. As we well know, it is one of the basic fundamentals on which the medical profession is founded. It is my firm belief that for many years to come, and I hope for all time, altruism will continue to ramify through medical practice, softening and blessing its administration to mankind.

This section can no longer afford to be content with perfecting the pediatric knowledge of its members; it must measure to a fuller scope of usefulness by giving more consideration to the pediatric practice of the general practitioners. The ultimate goal of pediatric practice, and the reason that justifies our specialization in this branch of medical practice, is the physical and mental well being of the infant and child. When we consider that many more babies and children are treated in a preventive and curative way by general practitioners than by pediatricians, it becomes quite apparent that we are not fully meeting our responsibilities. The activities of this section can justifiably be augmented, and the sphere of usefulness of the section can be quite advantageously extended.

Yearly the members of this section come together and hold a most pleasing and profitable meeting. The results of research work, the deductions from careful painstaking clinical observations, the presentation of original ideas, and a complete review of the literature on leading pediatric subjects are presented and discussed before this section. In consequence of these proceedings our members return home much more efficient pediatricians, stimulated to a higher grade of pediatric practice, with the end-results that stronger and healthier babies are reared, and infant and child morbidity and mortality are reduced.

If the general practitioners throughout the country were given the benefit of our deliberations, not only through publications in THE JOURNAL but in a more direct way, a better grade of pediatric practice, generally, would prevail, a greater number of stronger and healthier babies and children would be reared, and infant and child morbidity and mortality would be still further reduced. It appears to me that this can be accomplished, and the excellent work of our section multiplied a hundredfold, by the simple procedure of organizing a state pediatric society in every state in the union.

ORGANIZATION OF STATE PEDIATRIC SOCIETIES

The Section on Diseases of Children has fellow members from every state in the union. If these fellow members would serve as liaison members and transmit to the general practitioners of their respective states the advanced ideas and the essentials of successful pediatric practice through the agencies of state pediatric societies, much benefit would accrue to the babies and children of those states.

From past experience I am inclined to believe that a good deal of confusion exists about the purpose and modus operandi of a state pediatric society. The following are a few of the essentials, as I see them:

1. The object of a state pediatric society should be to obtain better pediatric practice for the state. This

* From the Pediatric Department of the University of Georgia Medical Department.

* Chairman's address, read before the Section on Diseases of Children at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

can be best accomplished by reaching the general practitioner and getting him interested in the study of pediatrics. His interest will not be secured by organizing a state pediatric society composed entirely of pediatricians. Naturally, he would look on such a society as one devoted exclusively to the advancement and improvement of the pediatricians. Therefore eligibility to membership in a state pediatric society should be: "membership in good standing in the state medical association, a desire to have better pediatrics practiced in the state, and a willingness to work to that end." Thus with eligibility to membership made inviting to the general practitioners, the scope of the state pediatric society would be enlarged, and gradually the standards of pediatric practice in the state would be elevated.

2. It should be fully recognized that general practitioners treat more babies than do pediatricians; therefore some method should be devised by means of which the general practitioners could be informed on current pediatric topics. This end could be attained if members of our section would bring before their respective state medical associations timely, broad-gaged pediatric subjects, such topics as would be welcomed and especially adapted to the needs of the general practitioners. As a result of this procedure, better pediatrics would obtain in the states, and gradually a better grade of pediatrics would be practiced throughout the nation.

3. A state pediatric society should neither ask nor permit the state medical association to make a distinct pediatric section of it, when it comes to presenting the yearly program of the state medical association. The pediatric society should ask, and if necessary insist, that a place on the general program be assigned to it. The object of this is to have papers and discussions on pediatric subjects reach the general practitioners. If this is not done, the general practitioner is not reached and the prime purpose of the state pediatric society is not fulfilled.

It should be the responsibility and duty of the officers of the state pediatric society to see that the pediatric program presented before the state medical association contains papers that are nontechnical and include in their preparation the latest ideas on any new line of thought or practice in pediatrics. It should be realized that the state pediatric society has the full responsibility of keeping the general practitioners of the state well informed on all pediatric subjects. In this way the state pediatric society would be popularized, and, in consequence, would receive the earnest support of all members of the state association. Gradually, it would be appreciated that the state pediatric society is of help to the general practitioners in keeping them well posted on the latest advancements in pediatrics and therefore is filling a distinct need in the state association.

4. The state pediatric society may or may not be a component part of the state medical association, but it should cooperate with it in every possible way. Of course, it would be better to have the state pediatric society a component part of the state medical association, whenever the constitution and by-laws of the state association would permit it. The officers of the state pediatric society should ask the state association to allow a morning or afternoon meeting on the general program for the reading and discussion of pediatric papers. In this way proper recognition and distinction would be given to pediatrics in the state. It might be further asked, if it does not conflict with the constitution and by-laws of the state association, and if agreeable to the program committee, that the pediatric society proceedings be designated on the official program under the caption, "State Pediatric Society Program."

5. The state pediatric society should hold its annual meeting at the time and place of the state medical association meeting. In this way a better attendance will be assured and a more enthusiastic interest will be secured. An annual smoker or banquet should be held, at which time the business activities might be transacted. The election of officers (president, vice president, and secretary-treasurer) should take place, and a constructive program of health activities outlined for the year's work. This program should be especially directed to include work along the most important and urgent pediatric problems pertaining to the welfare of the state. As the ultimate object and purpose of the state pediatric society is to obtain better pediatric practice for the state, and as the division of child hygiene, in every state board of health, has for its reason of existence the same object and purpose, necessarily there should exist a close cooperation and mutual working between the two. The officers of the state pediatric society, as the executive committee, should willingly and voluntarily serve as members of the medical advisory board of the state division of child hygiene. By this arrangement of organization, a powerful machine will have been created which, if efficiently managed and directed, cannot fail to secure better pediatric practice in the state.

6. The organization of a state pediatric society is not a difficult proposition. One or two interested men can easily perfect it. To a selected group of all the pediatricians of the state, and of as many general practitioners as advisable who are interested in babies' and children's practice, a letter should be sent stating that at the next state medical association meeting there will be a pediatric banquet for the purpose of organizing a state pediatric society, and that a cordial invitation is extended to them to be present. The secretary of the state medical association might place on his official program an announcement that there will be a pediatric banquet or smoker on some definite night of the state association meeting for the purpose of organization, and that every pediatrician and general practitioner interested in infant and child welfare is cordially invited to attend. At this meeting definite organization can be perfected in the usual manner.

As the humble originator and promotor of this scheme of organizing state pediatric societies throughout the Southern states, I can vouch for its practicability and for the excellent results obtained. Pediatric practice in the South some ten years ago, before the organization of state pediatric societies, was of such a grade that no Southern physician felt proud of it. Today pediatrics as practiced in the Southern states compares favorably with that found elsewhere. I feel reasonably certain that the organization of state pediatric societies has been a very important factor in the attainment of that end.

I am of the opinion that this section will not function to its fullest capacity, and therefore not properly fill its entire scope of usefulness, until the general practitioners are given more consideration in our present and future activities. To visualize the object and aims of our section in a narrow way, looking only to the advancement and improvement of our section members, will defeat our one big objective: Better pediatric practice in America.

If a closer relationship was established between the state pediatric societies and the Section on Diseases of Children, mutual benefit would be forthcoming to the two organizations. The stronger the state pediatric societies would become, the stronger it would make our section, and, vice versa, the stronger and more representative our section would become in national pediatric matters, the more readily would the state pediatric societies look to us as the fountainhead for the dissemination of leading pediatric thought throughout the nation.

It is pleasing to think how many more lives of babies and children would be saved, and of the reduction in morbidity and mortality that would follow, if this section would favorably decide on the establishment of a closer relationship between the activities of the section and the practice of the general practitioners of medicine. It is my firm belief, and it is the gist of the message that I wish to bring to you, that serious consideration should be given to the advisability of this section sponsoring the organization of a state pediatric society in every state in the union.

If the members of this section would see fit to take this action, our section not only would measure to its fullest responsibilities and expand its scope of usefulness along natural lines, but the successful establishment of state pediatric societies would greatly redound to its credit.

SUMMARY

1. The Section on Diseases of Children of the American Medical Association is the recognized national head in matters pertaining to pediatric practice in America. Its responsibilities in leadership are great and should not be forgotten, and its scope and usefulness should be enlarged.

2. Two factors are essential in securing better pediatric practice in America: the pediatricians should be most efficient, and the general practitioners should be kept well informed on the essentials of sound pediatric practice. General practitioners treat more babies than do pediatricians.

3. The organization of a state pediatric society in every state in the union will do much to disseminate worth-while pediatric knowledge, and in a general way elevate pediatric practice throughout the United States.

4. Many more healthier and stronger babies and children will be reared, and infant and child morbidity and mortality will be reduced, when the Section on Diseases of Children has given more consideration to the pediatric practice of general practitioners.

Psychiatry and Treatment.—There may be a difference of opinion as to whether psychiatric patients should be treated in a general hospital or not, but all the neuropsychiatrists on the staff of one of our local general hospitals which has accepted such cases for over twenty years are agreed that thoroughly satisfactory treatment may be given in a general hospital provided, as in this one, a special department is furnished and the treatment of the psychiatric patients is limited to the neuropsychiatric staff. Thoroughly satisfactory treatment includes medical supervision by a psychiatrist, nursing service by those trained in the care of nervous and mental patients, facilities for hydrotherapy, a properly supervised department of occupational therapy and recreation, complete laboratory facilities, modern diet kitchens with facilities for providing special diets, operating rooms available for complications existing or arising during the course of the mental disease, and consultants at hand for an opinion on any problem outside the psychiatric field.—Engberg, E. J.: The Treatment of Psychiatric Patients in Private Practice, *Minnesota Med.*, September, 1929.

UNDULANT FEVER

ETIOLOGY, EPIDEMIOLOGY AND LABORATORY DIAGNOSIS *

A. V. HARDY, M.B. (TOR.)
IOWA CITY

During 1924 and 1925 in the United States, exclusive of Texas, Arizona and New Mexico, ten cases of undulant fever were recognized in six widely separated states. During 1928 and the first five months of 1929, more than a thousand cases were diagnosed and these had their origin in forty-two states. This increase in the recognition of the disease has been brought about by a growing awareness of its presence, and the further spread of knowledge will undoubtedly result in the recognition of more and more cases. It is my purpose, therefore, to present some of the salient points in the newer knowledge of this disease. That the data are incomplete may be apparent, but for this an apology is not necessary, since in the study of undulant fever the obtaining of complete and accurate information is dependent on the active cooperation of informed physicians. Conclusions at this time would be premature and are avoided, but these may slowly be formulated on the basis of sufficient and adequate data carefully compiled.

ETIOLOGY

In December, 1886, Colonel Bruce [1] first observed minute organisms in a spleen removed from a patient who died of undulant fever. The following year he succeeded in cultivating an organism which he later showed to be the etiologic agent of the disease. After studying these in the hanging drop, he described and represented the small coccoid bodies. His observations were confirmed, and the name *Micrococcus melitensis* was generally adopted. It was soon after pointed out, however, that bacillary as well as coccoid forms occurred. Ten years later, in 1897, Bang [2] described the etiologic agent of contagious abortion of cattle. He noted that these organisms, when observed in infected tissues, often appeared coccoid in shape. After isolation, however, he determined that he was dealing with "a small bacillus" for which the name *Bacillus abortus* was soon widely accepted.

For more than twenty years, these two organisms, so differently named and observed and studied by different groups of bacteriologists, continued to be regarded as entirely unrelated species, "It was as if twin brothers had been adopted by different families and given different surnames and for twenty years no one recognized the similarities in the boys because they were seen at different times and in different places." It was Miss Alice Evans [3] who in 1918 pointed out that these organisms were morphologically, culturally and biochemically indistinguishable, and serologically very closely related. This observation has been repeatedly confirmed and with this discovery the newer knowledge of undulant fever begins.

A reclassification and renaming on the basis of this discovery was clearly indicated. Meyer,[4] in 1920, recommended the formation of a new genus for these

* From the State Hygienic Laboratories and the Department of Preventive Medicine, State University of Iowa College of Medicine.

* Read before the Section on Practice of Medicine at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

1. Bruce, D.: Practitioner **39:** 161, 1887.
2. Bang, B.: J. Comp. Path. & Therap. **10:** 125, 1897.
3. Evans, Alice C.: J. Infect. Dis. **22:** 580 (June) 1918.
4. Meyer, K. F., and Shaw, E. B.: J. Infect. Dis. **27:** 173 (Sept.) 1920.

and related species and proposed the name *Brucella*, in honor of Colonel Bruce. His suggestion was given immediate approval and the name *Brucella melitensis* has been generally adopted. Previous distinctions are maintained by the recognition of different varieties. *Micrococcus melitensis* became *Brucella melitensis* variety *melitensis*, and *Bacillus abortus* became *Brucella melitensis* variety *abortus*. The latter variety was again divided into the bovine and porcine types.

The natural habitat of the melitensis variety is in goats. In the United States it is known to be of serious importance only in Arizona, Texas and New Mexico. Undoubtedly all states and probably almost all counties have cattle infected with *Brucella melitensis* variety bovine *abortus*. This organism causes contagious or infectious abortion, and that disease exceeds even bovine tuberculosis both in frequency of occurrence and as a cause of economic loss. The porcine abortus variety, isolated from hogs for the first time in 1914, has only recently been given serious attention. The prevalence of contagious abortion in hogs is quite unknown and the possibility of the spread of infection from hogs to cattle, or vice versa, is only now being investigated. Huddleson [5] has already reported that, of ninety-six strains isolated from cattle, eight were of the porcine type. Smith,[6] on the other hand, recently studied a strain isolated from hogs which approached the bovine type. In horses and sheep *Brucella melitensis* infections are also known to occur occasionally, but these appear to have little part in the spread of undulant fever in the United States.

All the characteristics by which micro-organisms are commonly differentiated these three varieties of *Brucella melitensis* have in common. Morphologically they are small, nonencapsulated, nonmotile and gram-negative. Coccoid and bacillary forms occur as well as intermediary oval shapes. The slight differences in shape are apparently inconstant and are not generally regarded as of value in classification. Culturally, growth takes place slowly, in a liquid medium, rarely being apparent earlier than the fourth day, and occasionally not until after ten days or later. On agar, the colonies on first subcultures usually make their appearance in from forty-eight to seventy-two hours and slowly increase in size. Neither acid nor gas is produced by any variety in the ordinary fermentation tests, and by simple agglutination procedures the strains cannot be differentiated.

The tests used in classifying the varieties may now be noted. By agglutinin absorption the melitensis and abortus varieties may be separated, but the porcine and bovine types are by this method indistinguishable. An important though inconstant difference is found in the requirement of carbon dioxide for growth. The bovine abortus variety characteristically demands an atmosphere with an increased carbon dioxide tension, while the melitensis and porcine abortus grow in an unmodified atmosphere and are somewhat inhibited by carbon dioxide. Using mediums modified only by the addition of thionin, methyl violet or basic fuchsin, Huddleson [5] developed a simple method for use in classifying the three varieties. I have found this to give clear cut results with observations in agreement with other tests. A difference in dextrose utilization has been described by McAlpine,[7] and a variation in the amount and rate of hydrogen sulphide production by Huddleson.[5] These differences will probably not prove of superior value in a classification of the varieties.

A comparison of the relative pathogenicity of the varieties is of much importance, but results are often indefinite and sometimes contradictory. It is generally agreed that for guinea-pigs the porcine type is definitely more pathogenic than the bovine. That the melitensis variety more readily produces infection in monkeys than the abortus variety was the finding of Burnet [8] and others. More recently, however, Huddleson [9] found that the porcine abortus produced the most severe infection of all, with death usually resulting. The bovine variety caused only a mild infection. In his preliminary report, the relative virulence of the bovine abortus and melitensis varieties was not clearly indicated. The inadequacy of the reported pathogenicity studies on animals is apparent. Knowing, however, that there is a marked variation in individual susceptibility and an equally marked variation in the virulence of strains of the same variety, it is obvious that true differences in the pathogenicity can be determined only after extensive studies. Conclusive evidence regarding the relative virulence for man has yet to be obtained.

The variety that most commonly causes undulant fever in the United States has also to be determined. That the melitensis is a not uncommon cause of infections in the three previously mentioned Southern states is recognized. When goats are not related to the spread of the disease there are few data regarding the strains involved. That the porcine type is chiefly concerned is believed by many. My observations seem to indicate this, since of the twenty-eight strains isolated from human beings twenty-one are of the porcine type. Huddleson,[5] moreover, has typed thirty-five strains from human beings (including several isolated by me) and found twenty to be the porcine and fifteen the bovine abortus. These results must be interpreted with caution. We have noted that the isolation of the porcine type from infected guinea-pigs was readily accomplished, whereas in those treated with the bovine type failure to grow the organism was not uncommon, even though the animals gave unquestionable serologic evidence of infection. Moreover, Burnet [10] demonstrated that, in goats infected with the melitensis variety, positive blood cultures were readily obtained (seventeen of twenty-six cultures on eleven goats), whereas from the abortus infected animal they were rarely obtained (one of twenty-six cultures on six goats). Moreover, we have observed that cases of undulant fever in which the infection was traced to hogs readily yielded positive cultures, while those epidemiologically related to cattle and studied in a similar manner gave but infrequently any positive results. Further, of the first twelve strains isolated in our laboratories, only one was of the bovine type, probably since the requirement of the increased carbon dioxide tension was not supplied. Undoubtedly, the modification of our technic made possible the isolation of six of the seven bovine strains which we have obtained, since we have encountered only the one which would grow on first subcultures in an unmodified atmosphere. The results from other medical laboratories may also be influenced by a similar error. The proportion of the bovine and porcine strains that have been isolated in the United States may therefore be but an indication of their occurrence in the blood stream or of the relative ease with which they may be cultivated. A classification of isolated strains is

5. Huddleson, I. F.: Undulant Fever Symposium, Tr. Am. Pub. Health A., p. 18.
6. Smith, Theobald: J. Exper. Med. **49**: 671 (April) 1929.
7. McAlpine, J. G.: J. Infect. Dis. **42**: 73 (Jan.) 1928.
8. Burnet, E.: Arch. Inst. Pasteur de Tunis **12**: 48, 1923.
9. Huddleson, I. F.: J. Bacteriol. **17**: 58 (Jan.) 1929.
10. Burnet, E.: Arch. Inst. Pasteur de Tunis **17**: 108, 1928.

important but it seems evident that this will not be a reliable index of the importance of the different varieties as a cause of human disease.

PATHOLOGY

The study of the pathologic changes in *Brucella melitensis* infections in human beings is almost an untouched field. Hughes [11] reported several fatal cases, but there was little more than a mention of the enlarged liver, the basal congestion of the lungs and the occasional involvement of the intestine and lymph glands. He also reported cases with clinical evidence of cardiac disease and of meningitis which revealed local pathologic lesions, evidently caused by *Brucella melitensis*. The recent reports in the literature of fatal cases caused by the abortus variety indicate that the same types of lesions may be expected, but these have done but little to elucidate the character of the disease. They also stress the variability in the results. The necessity of a more frequent consideration of *Brucella melitensis* infection at necropsy is therefore apparent. A reasonable precaution in many instances would be the modification of the routine bacteriologic technic in order that *Brucella melitensis* of any variety might be isolated if present. Since the mortality rate of the disease is low, few fatal cases will be observed and for this reason a special effort should be made to obtain a detailed postmortem study in all instances.

The lesions found in domestic animals may be mentioned here, since a better understanding of the epidemiology of undulant fever may thereby be obtained. *Brucella melitensis* naturally infects all domestic animals and in general gives rise to lesions similar in type though differing in degree. In cows, pathologic changes are detected in the pregnant uterus and the mammary glands. In the former there is a localized or diffuse acute, subacute or chronic inflammation involving the chorion, the placenta and spreading to the endometrium.[12] In the udder there are no gross changes, but on microscopic examination minute areas of subacute or chronic inflammation are commonly found.[13] There is little tendency for this chronic infection to terminate spontaneously. Once established it evidently may persist throughout the life of the animal. The only other site in cows from which organisms have frequently been recovered is the supramammary lymph glands. In goats, however, the infection has been shown to be more generalized,[14] and it is probable that a similar generalization will be found in hogs. With pathologic changes so variable, one naturally expects a disease with diverse manifestation. In cattle, abortions, premature births, retained placentas or sterility are signs of infection. Even these may be absent, and then the only evidence is that supplied by laboratory tests. In goats, sheep and hogs there are frequently no external signs of disease, and this is particularly true in chronically infected herds. Abortions are, however, of not uncommon occurrence. Prior to the abortions (or normal births) in infected animals, and for a varying period after, there is usually a vaginal discharge and this mucopurulent material is heavily loaded with the infecting organism. The bacteria are also given off in the milk from cows in relatively small numbers but from goats in large numbers. In goats the urine also has been shown to contain organisms. Further study of animals, particularly hogs, is necessary, however, to determine both the sites of infection and the discharges which may carry the organisms.

11. Hughes, M. L.: Mediterranean, Malta or Undulant Fever, 1897.
12. Hallman, E. T., and others: Tech. Bull. 93, Michigan State Agr. Exper. Sta., 1928.
13. Runnells, R. A., and others: Cornell Veterinarian, October, 1925.
14. Report of the Mediterranean Fever Commission, part 6, p. 36.

EPIDEMIOLOGY

During the work of the British Mediterranean Fever Commission, it was discovered quite by accident by Zammitt and Horrocks [15] that goats were the source of undulant fever in that region. That the disease almost completely disappeared from among the soldiers and sailors, following the prohibition of the use of raw goat's milk, is well known and the impression is readily obtained that the infection was spread only, or almost only, through the use of goat's milk. It must be remembered, however, that the group of persons concerned had practically no direct contact with animals. The epidemiologic data collected from persons having direct contact with goats [16] requires that one look for other modes of transmission.

In the United States, as in Europe, the early study of undulant fever was conducted by army medical officers, notably Craig, Ferenbaugh and Gentry. That the first reported case in which the infection was acquired in this country was diagnosed following the recognition of several cases among soldiers recently returned from tours of duty in tropical regions is significant. The disease was again called to mind, by the studies of Ferenbaugh and Gentry in 1911, and additional reports of cases soon followed. There was also a similar increase in the recognition of the disease following the study of the Phoenix, Ariz., outbreak in 1922.[17] Thus the early studies clearly show that the recognition of undulant fever is dependent on a conscious consideration of it in differential diagnosis.

Until recently the presence of goats as a possible source was the one situation that suggested the possibility of undulant fever, and cases were recognized only in goat raising districts. The early cases are therefore confined to Arizona, Texas and New Mexico, where a total of 160 cases have been reported to date, but to these must be added three related cases acquired in the United State Hygienic Laboratories. These may be regarded as having their source chiefly if not solely in goats. The recent infections with undulant fever which have been reported from other states were, with possibly an occasional exception, among persons who had had no contact with goats and who did not use goats' products as food.

Attention may now be confined to a study of the epidemiologic data relative to these cases known or believed to be caused by an abortus variety of *Brucella melitensis*.

Incidence in Countries Other than the United States.—Bevan [18] of Rhodesia in 1921 first called attention to cases of undulant fever probably related to cattle with contagious abortion. Four years later he reported a total of thirty-five cases.[19] Since 1925 there have been numerous other reports of cases unrelated to goats but related to cattle with contagious abortion. In Europe, from Denmark, Italy, Germany, France, England, Holland, Switzerland, Poland, Spain and Sweden, investigators report such cases. In Denmark during the first year in which a study was conducted 222 cases

15. Zammitt, T., and Horrocks, W. H.: Reports of the Mediterranean Fever Commission, part 3, p. 83.
16. Critien, A.: Report of the Mediterranean Fever Commission, part 7, p. 235.
17. Watkins, W. W., and Lake, G. C.: Malta Fever, J. A. M. A. **89**: 1581 (Nov. 5) 1927.
18. Bevan, L. E.: Tr. Roy. Soc. Trop. Med. & Hyg. **15**: 215, 1922.
19. Bevan, L. E.: Proc. Roy. Soc. Med. **19**: 8, 1925.

were diagnosed.[20] In Canada also following the first recognition of cases in 1928, the number diagnosed has rapidly increased.[21]

Incidence and Distribution in the United States (exclusive of Texas, Arizona and New Mexico).—The increasing recognition of undulant fever is clearly shown in table 1. The information here presented has been collected in part from the numerous reports in the literature, but chiefly by direct correspondence. The latter was first undertaken in connection with the work of the Committee on Contagious Abortion of the National Research Council. The directors of state laboratories, chiefs of the divisions of communicable diseases, secretaries of state departments of health, and other investigators, who have so freely placed at my disposal a tabulation of their data, have made possible this epidemiologic analysis and summary. In most instances the diagnosis was established on the basis of clinical as well as laboratory evidence. In a few, only laboratory data were available. These cases have been included, since we have found in Iowa that almost invariably agglutination of *Brucella melitensis* in diagnostic titers by a blood specimen sent for an agglutination test represented a clinical case of undulant fever. As far as known, cases giving positive laboratory evidence without corresponding clinical signs are not included. I believe, therefore, that I may confidently present these figures as including only, though not all, recognized cases. To date all but three states have reported infections. With no probability of error, I may say therefore that undulant fever occurs either sporadically or endemically in all states.

TABLE 1.—*Known Incidence of Undulant Fever in the United States Exclusive of Texas, Arizona and New Mexico.**

Year	Number of States Reporting Cases (Including District of Columbia)	Total Number of Cases Reported
1922	1	1
1923	0	0
1924	2	2
1925	4	8
1926	7	42
1927	18	206
1928	38	635
1929†	34	402
Totals	43	1296

* Cases in other states known or believed to be caused by Brucella melitensis variety melitensis are omitted.
† January to May inclusive; reports incomplete; no data from five states.

There is a wide variation in the number of cases recognized in different states and this evidence is worthy of some examination. Earlier than 1928, eight state laboratories had adopted the routine practice of examining for undulant fever all blood specimens sent for an agglutination test. Up to the end of 1928, 560 cases had been recognized in these states, or an average of seventy cases per state. On the other hand, fourteen state laboratories examined for the infection on request only and these states had an average of four cases. Furthermore, in seven states in which there was no direct attempt made to obtain the accurate recognition of this fever, there was only a total of six recognized cases. These three groups of states are widely scattered. I believe, therefore, that at the present time the apparent incidence is partly relative to the active, casual or indifferent interest displayed in the respective states. This impression is strongly borne out by the experience of Simpson,[22] Carpenter [23] Giordano [24] and others, who have taken an active interest in obtaining accurate recognition of the disease in relatively restricted areas. The number of cases found by these investigators gives reason for suspecting that, at the present time, a major portion of the infections are passing unrecognized.

In states in different areas in which equally effective efforts are apparently made to obtain the accurate recognition of the disease, a true variation in incidence is observed. This may be dependent on the differences in the distribution of strains of *Brucella melitensis*, or of the nature of the occupations of the population. At this time, however, no final opinion can be formed regarding the true incidence and not until the disease is generally diagnosed and reported will an accurate knowledge of the situation be obtained.

Place of Residence.—Evidence here is very inadequate and this point is mentioned largely to emphasize the importance of the compilation of facts. For the formulation of effective preventive measures, these data must be available. Valuable knowledge as to the sources of infection and modes of transmission may also be deduced from a consideration of residence immediately prior to the onset of illness. For the purposes of this tabulation, the population may be divided into four groups as indicated in table 2. The rural group is composed largely of persons having more or less direct contact with live stock and using raw dairy products as food. In towns of less than 5,000 population, a proportion have occasional contact with live stock, and the milk supply, as a rule, is raw and relatively uncontrolled. Persons living in cities of more than 5,000 rarely have direct contact with live stock and a controlled pasteurized milk supply is common or can readily be obtained. The packing house employees having intimate contact with fresh meats should be separated from the general urban population.

TABLE 2.—*Place of Residence of Patients with Undulant Fever in Iowa Compared with the Distribution of Population*

Locality	Population (1925 Census)	Percentage of Total Population	No. of Cases of Undulant Fever to June 1, 1929	Percentage of Total Cases	No. of Cases per 100,000 of Population
Urban, exclusive of packing house employees	757,807	31.3	30	13.4	4
Towns of less than 5,000 population	635,855	25.9	53	23.9	8.3
Rural	1,018,265	42.5	116	52.3	11.4
Urban, packing house employees	8,000 (approx.)	.3	23	10.4	287.5
Totals	2,419,927	100	222	100	9.2

The statistics for Iowa are shown in table 2. The significance of these will be more apparent when considered in the light of the age, sex and occupation of the patients.

Age.—The distribution of the cases by age is shown in table 3. This age incidence is unusual, but on this point all reported observations are in general agreement. The similarity of a curve, indicating the age distribution of males and of those having direct contact with live-

20. Madsen, T.: Epidemiol. Rep. 114, May, 1928.
21. Mitchell, C. A., Ottawa, Canada: Personal communication to the author.
22. Simpson, W. M., Dayton, Ohio: Personal communication to the author.
23. Carpenter, C. M.: Undulant Fever Symposium, Tr. Am. Pub. Health A.
24. Giordano, A. S.: J. Indiana State M. A. 22: 135 (April) 1929.

stock or carcasses, is striking. Moreover, the age distribution of females somewhat simulates the age distribution of those who have no history of direct contact with live stock or carcasses (a group composed of equal numbers of males and females). I believe, therefore, that the age distribution is dependent on two

TABLE 3.—*Distribution by Age of Undulant Fever Among Cases in the United States and in Iowa*

	United States						Iowa					
	Unselected Cases		Males		Females		Unselected Cases					
Age Group	No.	%	No.	%	No.	%	No.	%	No.*	%	No.†	%
0-4	4	.6	3	.6	1	.5	1	.5	0	0	1	1.5
5-9	16	2.3	9	1.7	5	2.7	4	1.9	0	0	2	3.1
10-14	30	4.2	18	3.5	11	5.9	9	4.3	4	3	5	7.8
15-19	52	7.3	41	7.9	11	5.9	12	5.8	7	5.2	5	7.8
20-24	89	12.5	61	11.7	24	13.0	27	13.0	20	14.9	7	10.9
25-29	88	12.4	67	12.9	21	11.4	24	11.6	16	12.	6	9.4
30-34	86	12.1	66	12.7	20	10.8	22	10.6	17	12.7	4	6.3
35-39	107	15.0	85	16.4	22	11.9	37	17.9	28	20.9	8	12.5
40-44	89	12.5	63	12.2	21	11.4	25	12.1	18	13.4	5	7.8
45-49	50	7.	38	7.3	12	6.5	13	6.3	9	6.7	4	6.3
50-54	36	5.	27	5.2	9	4.9	13	6.3	9	6.7	4	6.3
55-59	25	3.5	14	2.7	11	5.9	6	2.9	1	.8	4	6.3
60-64	21	3.	12	2.3	10	5.4	7	3.4	2	1.5	5	7.8
65-69	12	1.7	13	2.5	5	2.7	5	2.4	3	2.2	2	3.1
70-74	6	.8	2	.4	1	.5	2	1.	0	0	2	3.1
75+	1	.1	0	0	1	.5	0	0	0	0	0	0
	712	100	519	100	185	100	207	100	134	100	64	100

* Patients having had direct contact with livestock or carcasses.
† Patients having had no direct contact with livestock or carcasses.

factors, a variation in susceptibility and a variation in direct exposure to infected animals.

Sex.—The percentage of males and females is variable, as is shown in table 4. That males are no more susceptible than females is recognized in the literature and is borne out by the two groups of cases in which direct contact with live stock did not occur. On the other hand, in the families in which occupation involved direct contact with live stock or carcasses, the number

TABLE 4.—*Distribution by Sex of Undulant Fever in Different Localities and Among Different Groups*

			Males		Females	
Locality	Nature of Cases	No. of Cases	No.	Per Cent	No.	Per Cent
United States (excluding Texas, Arizona, New Mexico)	Unselected cases.....	877	614	70	263	30
United States *	Two milk-borne epidemics in 1928	21	10	48	11	52
Iowa	Unselected cases.....	228	180	79	48	21
Iowa	Patients having had no direct contact with live stock or carcasses.	75	37	49	38	51
Iowa	Cases in families in which the occupation gave any direct contact with live stock or carcasses.	147	136	93	11	7
Denmark †	Unselected cases; one year.	222	166	75	56	25
Rhodesia ‡	Adults only.....	31	26	84	5	16

* Farbar, M. F., and Mathews, F. P.: Ann. Int. Med. **2**: 875, 1929. Jones, J. L., state epidemiologist, Kentucky: Personal communication to the author.
† Madsen, T.: Epidemiol. Rep. 114, May, 1928.
‡ Bevan, L. E.: Proc. Roy. Soc. Med. **19**: 8, 1925.

of males exceeded greatly the number of females; moreover, in this group in Iowa, of the eleven females, six gave a history of having had repeated and direct contact with the live stock. That this relationship in the proportion of males to females is also in some way dependent on contact exposure seems apparent.

Occupation.—The distribution of cases by occupation in the United States and in four selected areas is shown in table 5.

Source of Infection.—The detection of the sources of infection is unusually difficult, since animals with contagious abortion show no external manifestations of disease. In order to determine the reliability of the herd histories in determining the presence or absence of *Brucella melitensis* infections we have correlated our serologic observations with the herd histories which we obtained. We have examined serologically a total of 675 cattle from fifty-five herds, and 223 hogs from twenty-four herds. We found that, on the basis of a history of abortion, only slightly more than half of the infected herds of cattle would be detected. Even including the data regarding retained placentas and sterility, on the basis of history alone a small proportion of infected herds would be missed. Among hogs, the twelve serologically positive herds were equally divided between those with a history of abortions and those with no history even suggestive of contagious abortion. Moreover, in a few instances, cattle and hogs having a history of sporadic abortions, retained placentas or sterility gave serologically no evidence of infection with *Brucella melitensis*. It is evident, therefore, that to determine accurately the sources of infection, serologic tests are essential.

TABLE 5.—*Distribution by Occupation of Undulant Fever in the United States, and in Four Selected Localities*

	U. S. Total		Iowa		Tennessee *		New York State †		Dayton, Ohio ‡	
Occupation	No.	%	No.	%	No.	%	No.	%	No.	%
Farmers	192	28.8	103	46.2	24	47.1	20	14.9	8	14
Housewives on farm.....	19	2.8	11	4.9	5	9.8	1	1.7	0	0
Packing house employees, butchers, veterinarians...	46	6.9	25	11.2	7	13.7	4	3.	0	0
Business, professional students, and laborers.....	263	39.4	48	21.5	15	29.4	78	58.2	27	47.4
Housewives	112	16.8	22	9.9	0	0	25	18.7	22	38.6
Children and invalids.....	26	3.9	14	6.3	0	0	3	2.2	0	0
Laboratory workers.....	9	1.4	0	0	0	0	3	2.2	0	0
Totals	667	100	223	100	51	100	134	100	57	100

* Litterer, William, Director State Laboratories, Tennessee: Personal communication to the author.
† Gilbert, R., Albany; Carpenter, C., Albany; Bayne-Jones, S., Rochester, and Krumwiede, C., New York: Personal communication to the author.
‡ Simpson, W. M., Dayton, Ohio: Personal communication to the author.

So far as is known at the present time, cattle and hogs with contagious abortion are the source of these reported human infections. The data at hand must be interpreted with caution; yet the epidemiologic evidence seems to indicate that the chief source in the United States lies in cattle.

Modes of Transmission.—That undulant fever may be transmitted through the use of raw goat's milk is an accepted fact. The probability of the same mode of transmission being effective when cattle were involved was assumed. It is true that an increasing number of cases are being reported in which the patients had had no direct contact with animals but used raw dairy products from infected cows. All the facts, however, cannot be satisfactorily explained on the assumption that the infections are transmitted from infected cattle only through the use of raw dairy products. Moreover, when hogs are concerned another mode of transmission must be considered. We [25] have shown that in guinea-pigs the unabraided skin is a more ready portal of entry than the digestive tract. We have also demonstrated the importance of dosage in determining whether the

25. Hardy, A. V., and others: To be published.

infection will or will not be acquired. As a rule the organisms are present in cow's milk in relatively small numbers, but they do occur in vast numbers at certain periods in vaginal discharges. Contact with infected stock must frequently result in contamination of the hands, and this followed by direct entrance of the organisms through the skin has not, I believe, been given due consideration in the study of the transmission of this disease.

COMMENT ON EPIDEMIOLOGIC DATA

Final conclusions at the present time must be avoided. The accumulated information should be carefully considered, however, in an attempt to obtain directions for further study. That the disease has occurred endemically or sporadically for years past, though undiagnosed or inaccurately diagnosed, is a safe assumption. In order to determine the true incidence it is highly essential, therefore, that special efforts be made to obtain accurate diagnoses. Of first importance in this is the dissemination among physicians of the newer knowledge of the disease, particularly among those serving the rural population. Laboratory facilities are essential and now in practically every state are readily available, so continued failure to recognize the disease is no longer excusable.

From the data presented it is apparent that a knowledge of the sex, age and occupation may be used to determine the relative importance of the various modes of transmission. On the consideration of this alone, the opinion that transmission occurs only by the ingestion of raw dairy products is no longer tenable, since, for example, among farm residents the cases include nine times as many males as females.

In the study of the epidemiology of undulant fever, the cooperation of veterinarians is almost essential. In Iowa, following an agreement with the Bureau of Animal Industry of the State Department of Agriculture, and the State Veterinary College, our work has been both easier and more effective. At the time of our epidemiologic investigation we obtain a signed request for the examination of any stock that might be the source of the infection, and on directions from Dr. Malcolm, chief of the Bureau of Animal Industry, a local assistant state veterinarian examines the stock and collects blood samples in duplicate. These are studied by us and by the Department of Veterinary Investigation of the State Veterinary College. Such a cooperation has proved, I believe, mutually pleasant and beneficial.

LABORATORY DIAGNOSIS

It has been repeatedly pointed out that in undulant fever the laboratory tests are of first importance in establishing diagnosis. The technical details of methods are readily available, and I wish here simply to point out some common errors on the part of both the internist and the laboratory worker.

The two procedures of prime importance in the laboratory diagnosis of undulant fever are the macroscopic agglutination test and hemocultures. The microscopic agglutination test and urine cultures are of less value, and guinea-pig inoculations, which are important in special studies, have little place as an aid in diagnosis.

The chief error of the internist has been, and is, his failure to take specimens for laboratory examination. In view of the unusual variability in the clinical manifestations of undulant fever and of the fact that it may simulate other common and well known diseases, it is apparent that accurate diagnoses will be dependent on the frequency of examinations for undulant fever. The macroscopic agglutination test is of proved value. Owing to the relatively prolonged period of onset in this disease, ordinarily a positive test will be found at the time of the first consultation. In one case which we first observed in a survey of apparently healthy packing house employees, we found a titer of 1:2,560, three weeks before the patient stopped work or applied to a physician. In three instances only, we have first obtained negative tests, to be followed later by positive reactions. A desirable routine which I believe should be conscientiously followed is the taking of from 3 to 5 cc. of blood for an agglutination test from all patients with febrile illnesses of undetermined etiology. To establish the true prevalence of undulant fever, this must be applied to patients with mild illnesses and indefinite symptoms as well as to those having histories characteristic of undulant fever.

To present reliable evidence to the physician, certain points must be carefully observed by the laboratory worker. The organism used must be of known agglutinability, properly checked by a positive control test. The density of the antigen must be accurately standardized. Prolonged incubation is essential. A period of four hours in the water bath at 37 C., followed by from sixteen to twenty hours' refrigeration before reading, is recommended. Serums vary in the rapidity with which they cause agglutination, and failure to observe this procedure will eventually result in false negative readings. Only complete, or almost complete, agglutination should be reported.

The laboratory interpretation which is indicated in our report but which must be weighed by the internist in the light of other clinical conditions is as follows: Titers of less than 1:40 are regarded as negative; 1:40 as doubtful; 1:80 as weakly positive; 1:160 and 1:320 as positive; 1:640 and 1:1,280 as strongly positive, and above this as very strongly positive. By the clinician it must always be borne in mind that infections with positive serologic tests but without clinical manifestation occur and that these may be associated with other illnesses. On two occasions we have noted such an occurrence in the presence of malignant disease, once in tularemia and once in appendicitis.

As a routine diagnostic procedure the macroscopic agglutination test will be found most useful, but cultural studies are important, particularly during the period in which the disease is being investigated. In the past, undoubtedly many cases of undulant fever have been studied culturally but with false negative results. This emphasizes the fact that the usual methods of handling blood cultures will not reveal *Brucella melitensis*, and only when proper procedures are followed will the results be of value. The reliability of this work will be dependent chiefly on the bacteriologist, but two things the clinician must keep clearly in mind. Since the organisms are often present in the blood in very small numbers an adequate volume must be inoculated, at least 10 cc. Furthermore, since *Brucella melitensis* multiplies slowly, it will be overgrown by any extraneous organism, so particular care must be taken to avoid contamination.

The laboratory worker on his part must supply the proper medium: a fresh beef liver infusion, p_H 6.6 (Huddleson[26]). Prolonged incubation must be practiced. Subcultures from broth should be made for the first time between the fourth and seventh day, and

26. Huddleson, I. F.; Hasley, D. E., and Torrey, J. P.: J. Infect. Dis. 40: 352 (Feb.) 1927.

for the last time before being discarded as negative after more than two weeks' incubation. Three of our subcultures made during the third and fourth weeks of incubation showed for the first time a growth of the bovine variety. Differences in carbon dioxide requirements must be remembered and duplicate cultures made, one being incubated in air and the other in an atmosphere with an increased carbon dioxide tension. This may be obtained by a method such as described by Fitch [27] or by the addition of an acid to a carbonate held in a small container in a museum jar. Best results are obtained with from 5 to 10 per cent carbon dioxide by volume.

All organisms isolated should be preserved and given careful study. If this is not practicable, they should be sent to a laboratory, where investigators are conducting these particular bacteriologic studies.

GENERAL COMMENT

Undulant fever has been termed a disease of the future, but the rapidly increasing recognition of cases makes it a problem demanding immediate attention. When any new condition involving the public health thus suddenly presents itself, there is always a danger of making regrettable errors, particularly in legislation concerning it. In undulant fever, due caution in the interpretation of the observations should largely eliminate this danger. A conservative attitude is justified, since it appears obvious that the disease is not a new one but one newly recognized. Deaths are very few, serious sequelae are infrequent and acute suffering is unusual, but there is now occurring an undetermined and probably severe economic loss. In preventing this, the livestock and dairy industry will apparently be concerned, and a prematurely attempted eradication of contagious abortion would prove both ineffective and disastrous. Control measures will be carried out by public demand on the basis of the expressed opinions of physicians and the recommendations of health officials. In many respects the knowledge of undulant fever is very inadequate, and one cannot wisely at this time make hasty conclusions or incriminating statements. Much economic waste and even impairment of human health (through a decreased consumption of milk) may be avoided if we are content to study carefully and quietly and then act wisely.

SUMMARY

1. The characteristics of *Brucella melitensis* organisms have only recently been fully described.

2. A classification of strains isolated from human beings cannot now be regarded as a reliable index of the importance of the different varieties as a cause of human disease.

3. A special effort should be made to obtain a detailed postmortem study in all fatal cases of undulant fever.

4. The pathologic lesions and clinical signs of *Brucella melitensis* infections in animals show a definite correlation.

5. The epidemiologic data, based on the reports of more than a thousand recent cases of undulant fever in the United States, indicate that cattle and hogs with contagious abortion are the source of these infections.

6. Macroscopic agglutination tests on patients with febrile illnesses of undetermined etiology should be made more frequently.

7. Additional study is essential in order to determine effective and applicable methods of control.

27. Fitch, C. P.: J. Infect. Dis. **31**: 233 (Sept.) 1922.

UNDULANT FEVER

CLINICAL CHARACTERISTICS BASED ON A STUDY OF ONE HUNDRED AND FIFTY CASES OBSERVED IN IOWA *

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The first case of undulant fever in Iowa due to infection with *Brucella melitensis* variety *abortus* was recognized by Dr. L. R. Woodward [1] of Mason City in 1926. Since then to June 1, 1929, 230 cases have been so recorded by the Iowa State Department of Health, the diagnosis being confirmed in each case by a positive agglutination test at the state hygienic laboratory. Of this number, a group of 150 cases have been selected for particular study of the clinical characteristics. (The five cases previously reported by Awe and Palmer,[2] as well as a considerable number of those in the report of Hardy,[3] are not included in this group.)

The reports from the office of the state veterinarian and the State Veterinary College at Ames state that infectious abortion in cattle and swine prevails to a greater or less degree in different parts of Iowa. Undulant fever has likewise occurred in all sections of the state. It can with propriety be classed as an occupational disease in Iowa because, of the 150 patients in this series, 108 included farmers, farmers' wives, members of farmers' families, dairymen, stock buyers and packing house employees. This would seem to indicate that the principal sources of infection are bovine or porcine in origin. A definite instance of goat (caprine) infection has not been reported in Iowa.

The disease prevails mostly among men, as shown by the proportion of 120 males to thirty females. The ages involved belong to the active working period. The ages of 112 patients ranged between 20 and 50 years, there being only eighteen in the first two decades and twenty between the ages of 51 and 73.

The study indicates a number of gaps in our knowledge of the sources of infection. The vocations involved suggest that contact with animals, particularly cattle and hogs, is a prominent factor. The drinking of raw milk is given special mention in a considerable number of the cases; yet the relatively slight infection in children, the largest users of milk, precludes its general acceptance as an etiologic factor. In Iowa the porcine source of infection appears to be just as likely a source as the bovine, if not more so.

The increasing number of butchers, pig killers, and packing company employees becoming infected furnishes strong evidence that skin contact is a very probable portal of entry.

Among twenty-four patients, including three physicians, four nurses, two attorneys and several merchants, mechanics, clerks and students, evidence of the contact sources of infection mentioned were not obtainable.

The clinical course of the cases of undulant fever observed in Iowa is similar to the description of the abortus type of *Brucella melitensis* infection as

* Read before the Section on Practice of Medicine at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

1. Woodward, L. R.: J. Iowa M. Soc. **17**: 312 (Sept.) 1927.
2. Awe, C. D., and Palmer, H. D.: Am. J. M. Sc. **176**: 837 (Dec.) 1928.
3. Hardy, A. V.: J. Iowa M. Soc. **18**: 387 (Oct.) 1928.

reported during the past five years by Keefer,[4] Evans,[5] Huddleson,[6] Gage and Gregory,[7] Carpenter and Merriam,[8] Scott and Saphir,[9] Belyea,[10] Dickson,[11] and Kern,[12] as the disease occurred in different parts of the United States. It bears also a striking resemblance to its twin disease, malta fever (also referred to as Mediterranean fever, goat fever, melitensis septicemia, and by several other names) as it was first described by Burnett,[13] Bassett-Smith,[14] Bruce, [15] and Hughes,[16] occurring in its endemic countries along the Mediterranean.

The first case of malta fever recognized as such in the United States was reported by Craig [17] in 1903, and his classic clinical descriptions have been freely used for comparison, as well as those contained in the subsequent publications of Gentry and Ferenbaugh,[18] Holt and Reynolds,[19] Acken,[20] Hull and Black,[21] Todd,[22] Watkins and Lake,[23] and Kampmeier.[24]

Osler [25] described the disease as "a specific fever caused by the *Micrococcus melitensis* characterized by undulatory pyrexial relapses, profuse sweats, rheumatic pains, arthritis, and an enlarged spleen."

Craig stated that the symptomatology varied so much that it was extremely difficult to describe accurately all the forms which this protean disease may assume, but he says "that it is generally a fever of long duration, subject to frequent relapses, presenting a most confusing and irregular temperature course, and accompanied by severe pain in the joints, constipation, profuse perspiration, and often followed by arthritic pains with or without swelling of the joints. An enlarged and tender spleen is very common."

Hughes has given a most exhaustive and accurate description of the disease, recognizing three classes of cases:

1. A pernicious type, rare and generally fatal.
2. An undulant type, characterized by exacerbations of temperature at regular intervals.
3. A continued type, with continuous fever persisting for weeks or months.

4. Keefer, C. S.: Bull. Johns Hopkins Hosp. **35:** 6 (Jan.) 1924.
5. Evans, Alice C.: Bull. 143, U. S. P. H. S., 1925; Human Infections with Organism of Contagious Abortion of Cattle and Hogs, J. A. M. A. **88:** 630 (Feb. 26) 1927.
6. Huddleson, I. F.: Is Bacterium Abortus Pathogenic for Human Beings? J. A. M. A. **86:** 943 (March 27) 1926.
7. Gage, E. E., and Gregory, D. A.: Human Infection with Brucella Melitensis Variety Abortus, Treated with Mercurochrome, J. A. M. A. **87:** 848 (Sept. 11) 1926.
8. Carpenter, C. M., and Merriam, H. E.: Undulant Fever from Brucella Abortus, J. A. M. A. **87:** 1269 (Oct. 16) 1926.
9. Scott, R. W., and Saphir, O.: Am. J. M. Sc. **175:** 66 (Jan.) 1928.
10. Belyea, G. N.: Brucella Abortus Infection in a Woman, J. A. M. A. **88:** 1482 (May 7) 1927.
11. Dickson, E. C.: Observations on the Pathogenicity of Brucella Abortus, read before the American Society of Clinical Investigation, May 3, 1926.
12. Kern, R. A.: Am. J. M. Sc. **176:** 405 (Sept.) 1928.
13. Burnett: Practical Account of the Mediterranean Fever, London, 1816.
14. Bassett-Smith: Undulant Fever in the Tropics, edited by Byam and Archibald **2:** 998-1021, 1922.
15. Bruce: Practitioner **39:** 161, 1887.
16. Hughes: Mediterranean, Malta or Undulant Fever, 1897.
17. Craig, C. F.: Am. J. M. Sc., January, 1903, p. 105; Internat. Clin. **4:** 89, 1906.
18. Gentry, E. R., and Ferenbaugh, T. L.: Endemic Malta (Mediterranean) Fever in Texas with the Isolation of the Micrococcus Melitensis from Two Patients, J. A. M. A. **57:** 889 (Sept. 9) 1911; Endemic Malta (Mediterranean) Fever in Texas, ibid. **57:** 1045 (Sept. 23) 1911; Malta Fever in Texas, ibid. **57:** 1127 (Sept. 30) 1911.
19. Holt, R. L., and Reynolds, F. H. K.: Mil. Surgeon **56:** 414 (April) 1925.
20. Acken, H. S., Jr.: A Case of Malta Fever, J. A. M. A. **86:** 1687 (May 29) 1926.
21. Hull, T. G., and Black, L. A.: Undulant Fever as a Public Health Problem, J. A. M. A. **88:** 463 (Feb. 12) 1927.
22. Todd, M. L.: Mil. Surgeon **61:** 34 (July) 1927.
23. Watkins, W. W., and Lake, G. C.: Malta Fever, J. A. M. A. **89:** 1581 (Nov. 5) 1927.
24. Kampmeier, R. H.: Am. J. M. Sc. **176:** 177 (Aug.) 1928.
25. Osler and McCrae: Practice of Medicine, ed. 9, 1920.

In 1918 Evans [26] established the relationship of *Brucella melitensis* as the cause of malta fever in goat and man, and of *Brucella abortus*, or *Brucella melitensis* variety *abortus*, as the cause of contagious abortion in cattle and hogs. While the possibility of human infection was suspected for some time, absolute evidence was not obtained until Keefer described such a case in 1924. It is now generally accepted that *Brucella melitensis* variety *abortus* may infect man.

The disease of man contracted from cattle and hogs is indistinguishable clinically from that prevalent in Mediterranean countries and known as malta or undulant fever. Furthermore, it is accepted that the bovine and caprine varieties of organisms causing undulant fever are so closely related that they cannot be distinguished from each other by the ordinary laboratory tests. The same variability in the clinical course as described elsewhere has been noted in Iowa; nevertheless, a closer study of a somewhat larger group of cases, in which the diagnosis was confirmed in all by positive agglutination tests, and in 15 per cent by positive blood cultures, has shown a constancy in symptomatology and a rather well maintained clinical picture.

In 1927 the Iowa State Department of Health and Hygienic Laboratory gave wide publicity to the clinical characters of undulant fever, and it was gratifying to note the readiness with which general practitioners picked out the cases throughout the state. As the laboratory diagnosis confirmed their suspicions, it developed a clinical consciousness that was helpful in extending the further recognition of the disease.

One of the striking features of this group of cases was the lack of physical signs, the only distinctive symptom being an enlarged spleen, which was noted in fifty-six cases. Another significant feature was the singular lack of discomfort experienced by the average patient. A butcher was able to be in his shop during the entire five weeks' period of his illness. A housekeeper during an illness extending from June to December, 1928, was confined to her bed only for the short period of five days in September.

A farmer, aged 35, in whom the disease began about June 15, 1928, continued to work, the fever subsiding after four weeks, and then recurring early in August. During four days from August 13, he took an active part in threshing with a maximum daily temperature of 103 and 104 F. After the fever subsided in September, a second relapse developed in October, and during corn picking time in November he continued to have a daily fever. His convalescence was slow and recovery did not take place until March of this year.

CLINICAL CHARACTERISTICS

Onset.—If special distinction is to be given to certain features of the clinical picture, emphasis should be placed on the character of the onset, the rigors, the chills with profuse sweating, the muscular and joint pains, the loss of weight, and the undulant continued and persistent character of the fever curve.

The usual onset is gradual and insidious in the development of noticeable weakness with accompanying tired feeling. The patient often seems quite fresh in the morning but by the latter part of the afternoon is so fatigued as to be hardly able to get about. A headache and backache of greater or lesser severity are often features of the onset. Likewise, loss of appetite,

26. Evans, Alice C.: J. Infect. Dis. **22:** 580 (June) 1918.

digestive distress and constipation are frequent early symptoms. After a few days, or possibly several weeks, the patient becomes conscious of a hot feeling mostly in the afternoon, and is usually surprised to learn that the temperature is above normal. A feeling of feverishness, and light rigors and chills, are often the first indications of fever. Again, the onset may be ushered in abruptly by a severe chill and rapid rise of temperature, followed by very profuse sweating, and this, with the general muscular pains, gives the impression of a profound infection.

The nervous or mental state in the beginning is often significant, the patient being irritable, greatly depressed in spirits and anxious, with a strong sense of impending illness. This continues usually up to the time that a diagnosis is established, when the favorable prognosis possible in undulant fever is very reassuring.

Diagnosis.—With the onset of the illness established, and as the fever continues, the difficulties in differential diagnosis become more apparent. The clinical picture throughout is indicative of a septicemia and generalized infection. Tuberculosis is to be considered, but the absence of distinctive physical changes usually precludes it. The early enlargement of the spleen and occasional lymphadenomas, particularly in the younger patient, may temporarily suggest tularemia. The character of the rigors, the chills and the sweating are the most confusing clinical symptoms. The rigors are often so severe that the patient rocks the bed in a manner that reminds one strongly of the oldtime "ague shake." These not only are a feature of the onset but may continue for weeks and throughout the illness.

A farmer, aged 27, had one or two severe rigors a day, described as "rocking the bed," for a period of six weeks.

Another patient, a merchant, while in a wheel chair answering the inquiries of the hospital admission clerk, had a severe rigor and chill that appeared alarming, but as soon as he was placed in bed seemed quite comfortable. During a hospital stay of fourteen weeks, these rigors and chills were almost a daily occurrence. He finally recovered completely and at no time appeared seriously ill.

Sweating.—The symptom of perspiration or sweating is such a marked and constant feature of undulant fever that some of the older writers on malta fever referred to it as a "febris sudoralis." With possibly two exceptions, every one of the patients in this group emphasized the sweating as one of the most distressing complaints. It is distinctly a "night sweat," and in most instances comes in the morning hours of the night. Occasionally it was equally prominent in the day time. The statements of patients, varying from "wringing wet," "water runs off," "feel water running from side," "frequent changing of night clothes," "wet clean through the mattress," give an idea of the profuse drenching character. A lad, aged 16, had profuse sweats every night from 10 o'clock to midnight for six weeks. Several other patients had similar long periods of sweating.

In two patients a strong odor of the sweat was observed, a fact occasionally noted in the older descriptions of malta fever.

One is impressed by the profuse drenching character of the sweat, as the water literally rolls off the patient. It resembles a malarial sweat more than anything else. An Iowa practitioner of considerable experience remarked that he had never seen anything like it.

It is this unusual perspiration preceded by severe chills and rigors that constitutes the best differential sign from typhoid; furthermore, the so-called typhoid state is rarely observed in undulant fever.

Malaria has become a rare disease in Iowa, and the demonstration of malarial plasmodia in the blood usually readily permits of its recognition.

Arthralgia and Muscular Pains.—In all descriptions of malta fever, joint pains and general muscular ache are prominent characteristics of the clinical course. These may be regarded as equally distinctive of that form of undulant fever due to *Brucella abortus* infection. There is, however, considerable variance in the manner in which these symptoms are manifest. Usually they are connected with the onset, although occurring rather frequently throughout the course of the illness. The patients describe a general ache, joint pains, an aching fever and, in some instances, a severe pain in the calf of the legs.

One physician compared the severe headache and backache to the onset of smallpox. Another regarded the general muscular pains as significant of the beginning of an influenzal infection. The painful condition of the muscles associated with stiffness is often very distressing. A myositis is suggested because of the marked atrophy of the muscles noted as a sequel in some of the cases.

The joint symptoms naturally direct the thought toward rheumatic fever, but they are not identical. While occasionally swelling and hydrarthrosis are encountered, they lack the redness and painful character incident to rheumatic fever arthritis. The joint swellings in undulant fever are transient, usually existing but a few days, after which the joint returns to normal.

Fever.—The most distinctive feature of the clinical course is the fever. Its peculiar wavelike undulant curve and irregular long duration were regarded as highly characteristic by the British medical officers in the early descriptions of malta fever. Later observers have regarded the continued variable fever curve with relapses as significant but not necessarily pathognomonic. The same statement applies to the abortus type of undulant fever.

Many of the patients in our group continued to work with fever, and, although they were conscious of an increase in temperature, complete records were possible only in the hospital patients and those in charge of a special nurse at home.

Three definite types of fever curves were recognized. Two cases were noted for the fulminating malignant type, with the temperature rapidly rising to 106 F. and higher, soon overwhelming the patient with the hyperpyrexia.

The undulant type of fever curve from which the disease derives its name was not very constant in this group of Iowa patients and was demonstrable in only six of the cases. The long continued course, usually intermittent, with occasional spikelike curves and afebrile periods, was the predominant type observed.

In the charts comparing the fever curves of undulant fever with those of chronic tuberculosis, liver abscess, subacute bacterial endocarditis and typhoid, it was noted that these several continued types of fever all had points of similarity, making it difficult to formulate a diagnosis from the temperature chart alone.

CLINICAL PATHOLOGY

Daily examinations of the urine were made in all patients under direct observation, but the results were negative, except for such changes as are peculiar to prolonged periods of pyrexia.

The cerebrospinal fluid was examined in three cases without disclosing any special changes.

The blood changes, on the other hand, presented rather constant and therefore quite distinctive features. As the illness became prolonged, hemoglobinemia and erythrocythemia were noted; yet a severe secondary type of anemia was relatively uncommon. A leukocytosis was observed in a few cases, while a leukopenia with a relative increase of lymphocytes and mononuclear cells was present in almost every case in which frequent blood examinations could be made. In several cases the relative lymphocytosis was noted in the early stages of the illness, in one instance being as high as 79 per cent. More frequently, as the case progressed, the proportionate number of polymorphonuclear cells was reduced, as the lymphocytes and pathologic mononuclear cells increased, the average percentage ranging between 46 and 60. Awe and Palmer regarded an absolute mononucleosis as a characteristic feature of undulant fever. Castellani and Chalmers,[27] in their studies on malta fever, accorded pathognomonic significance to the increase of lymphocytes, both relative and absolute.

It appears, therefore, that undulant fever should be classed with typhoid, tuberculous and influenzal infections, in which leukopenia with a relative lymphocytosis characterizes the blood changes.

NUTRITIVE CHANGES

A loss in weight was noted in practically every patient of this series, a reduction of from 20 to 30 pounds (9 to 13.6 Kg.) being common in all the long continued cases. In five cases a loss of 40 pounds (18 Kg.) each, with a maximum of 50 pounds (22.7 Kg.) each in four cases, was observed. Anorexia and digestive distress are frequently a part of the onset; yet during the course of the illness, the appetite may improve and the food intake correspondingly increase, although not sufficiently to compensate for the hyperoxidation incident to the prolonged pyrexia.

Complications were comparatively infrequent in this series. The orchitis prominently mentioned in the earlier records of malta fever was present in only three cases. Polyuria, urinary incontinence, mild delirium and profound mental depression were symptoms in a limited number of the severe cases. A lowering of the blood pressure was noted rather constantly. In some of the patients over 50 years of age, in whom hypertension was present preceding the onset of undulant fever, a marked reduction of the blood pressure was noted during the course of the illness.

DIAGNOSIS

Craig, in his description in 1903 of the first cases of malta fever recognized in this country, stated that there is no pathognomonic symptomatology of malta fever. It appears now as if the same statement should apply to the abortus type with which this series of cases is concerned.

Nevertheless a clinical picture such as has been maintained in this rather large group of cases should develop a clinical consciousness that would permit very probable diagnostic conclusions. The degree of agglutination titer required for diagnosis has been variously discussed. Hardy recommends a titer of at least 1:160, and in view of his extensive study on the subject, this may well be accepted.

An accepted agglutination titer and the demonstration of *Brucella melitensis* variety *abortus* in pure culture in the blood stream should always be required for a positive diagnosis.

PROGNOSIS

There were three deaths in this series of 150 cases, or 2 per cent, indicating a low mortality. The published records of malta fever give the mortality rate as ranging from 2 to 8 per cent, increasing to 14 per cent in epidemics of the disease.

The tendency to recurrences and relapses does not permit any definite criteria in determining the probable duration of the infection. The duration in this series ranged from three weeks to one year. Attempts have been made to correlate the titer or degree of agglutination reaction with the severity or duration of the illness, without establishing any definite data. The agglutination titer in the 150 cases ranged from 1:40 to 1:10,240. A few instances may be of interest to illustrate the variability as related to the severity of the illness:

A farmer, aged 21, after one month's illness had a titer of 1:40, while a mechanic, aged 24, with a severe illness of six months' duration, had the same titer of 1:40. Again, a farmer, aged 35, with a severe illness of five months' duration, at no time had a higher titer than 1:80.

The two patients having the maximum titer of 1:10,240 were a housewife, aged 65, who had a light illness of one month's duration, and a farmer's son, aged 14, with a severe infection lasting three months. In the three fatal cases the titers were 1:80, 1:160, and 1:640, respectively.

THERAPY

Three forms of treatment have been proposed in undulant fever of the abortus type:

1. Chemotherapy.
2. Use of foreign proteins, vaccines and antibacterial serums.
3. Symptomatic measures.

The use of mercurochrome represents the principal application of chemotherapy, and beneficial results have been reported from its use in small numbers of cases by Ford, Gage and Gregory, Belyea, and Carpenter and Merriam. We have not had any experience with mercurochrome. The use of a milk preparation, sterilized milk and typhoid vaccine in a limited number of cases in my series did not appreciably modify the course of the illness.

At the last meeting of the Kansas State Medical Society, Angle[28] reported the use of a vaccine prepared from cultures of *Brucella melitensis* variety *abortus* in ten cases with evidently very gratifying results.

It is rather difficult to understand what a specific vaccine can accomplish in a disease condition in which the antibodies are present in such high concentration in the blood as well as abundant antigen to produce them.

To insure the acceptance of vaccines as having specific therapeutic value, a distinct modification of the

27. Castellani and Chalmers: Health of the Navy, 1903, p. 165.

28. Angle, F. E.: Proc. Kansas M. Soc., 1929.

clinical course, a decrease or disappearance of the bacteremia, and an increase in the agglutination titer must be demonstrable as the result of this type of therapy.

A leading pharmaceutic concern in this country is preparing an antibacterial serum, but as yet no definite reports regarding its use have been published.

For the present, symptomatic treatment offers the most for the patient with undulant fever, his activities being regulated by keeping him at rest in bed as long as the febrile state persists, administering sedatives for insomnia, headache and other distressing symptoms, and, most important, giving an abundant nourishing diet.

The convalescence is often prolonged over a long period and careful attention is necessary by means of psychic encouragement, physical therapy and other stimulating measures to insure a complete return to the normal state of health.

Bankers Trust Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HARDY AND BIERRING

DR. RUTH GILBERT, Albany, N. Y.: Dr. Hardy has pointed out that in Iowa the porcine variety of *Brucella abortus* has apparently been responsible for a large proportion of the cases of undulant fever. Of the eighty-five cases that have been studied in the New York State Laboratory, there has been only one in which there was any probability of the infection having been transmitted directly from hogs. With the exception of two laboratory infections, cow's milk has been the probable source of the infection in all cases in which a satisfactory history could be obtained. The available methods for differentiation of caprine, bovine and porcine strains of the abortus-melitensis group seem most unsatisfactory because of the inconsistencies constantly encountered. For instance, we have isolated two strains from cows' milk which, from the results of animal inoculation and absorption tests, would be considered of the bovine variety; yet they grew aerobically directly from the milk. Other strains, isolated from the blood of patients having undulant fever, which absorption tests have indicated to be *Brucella melitensis* variety *abortus*, have not grown under the usual aerobic conditions even after relatively long cultivation. At least one of the latter has shown no greater virulence for guinea-pigs than the bovine strains ordinarily encountered. Although it is now generally conceded that undulant fever may be incited by organisms of the abortus-melitensis group, harbored by goats, cows and swine, the relation of the varieties associated with the different species of animals appears to be still an open question. Dr. Hardy's conception of infection by means other than the ingestion of milk is of special interest. Dr. Theobald Smith in a recent communication also stressed the probability of infection through wounds. The statistics of Kristensen, the Danish observer, have shown a disproportionate number of cases among males, some of whom did not drink milk, but whose occupations brought them in contact with cattle.

DR. J. C. RUDDOCK, Los Angeles: Until 1927, undulant fever in this country had been considered a medical curiosity. In southern California, undulant fever has become rather a commonplace ailment. From Jan. 4, 1927, to Dec. 11, 1928, there have been reported in southern California thirty-one proved cases of undulant fever. In 10 per cent, or three cases, there was a definite history of goat's milk infection. In the remaining 90 per cent, raw milk from dairies in which there was active infection of contagious abortion among the milk cows was evidently the infective agent. The three patients who gave a history of goat's milk infection contracted the disease in other states. All the remaining twenty-eight gave a history of having been on a forced raw milk diet before contracting the disease. The facilities of the Hooper Research Foundation have been gratuitously offered the physicians of California and the possibility of missed cases has been minimized. Dr. Karl Meyer is now completing a series of experiments on monkeys which have been fed raw milk containing various concentrations of living *Brucella abortus*, and he finds that up to a certain number of organisms in raw milk there is a natural immunity which safeguards the animal against infection, but after this concentration has been passed the monkeys will invariably contract a clinical type of undulant fever as seen in human beings; the organisms can be recovered from the blood and the serum gives positive agglutination with *Brucella abortus* and *Brucella melitensis*. The economic situation has become rather acute in the war among the distributors of raw milk and pasteurized milk, and strongly affects our certified milk industries, because we have no certification against abortus infection. If raw milk is a source of some cases of undulant fever, the dairy industry should adjust itself accordingly. From observations, it is evident that raw milk is on trial as one of the etiologic factors in this disease, and also that the disease must be classed as a real economic problem that affects us all. There are certain outstanding characteristics and manifestations which seem to be common to practically all cases: the long-standing fever of an irregular type, the enlargement of the spleen, the sweats, the odor of which is usually a source of complaint to the patient, and the leukopenia. It behooves every physician to collect the blood from these patients and have it agglutinated for undulant fever. I believe that many cases of undulant fever have been missed in California because the physician is satisfied that the patient had a low grade tubercle infection. The fever runs from sixty days to two years and then the patient recovers. What would be a more natural diagnosis than tuberculosis?

DR. JAMES MARR BISAILLON, Portland, Ore.: We have had a mild epidemic in Oregon. Since attention has been attracted to the disease, we have observed sporadic instances from time to time. Dr. Bierring has properly stressed the one striking characteristic regarding the marked wealth of symptoms with a dearth of physical signs, and in those cases that I have encountered that has been the striking thing, plus the customary prostration which is usually seen in diseases that are confounded with undulant fever, such as typhoid and endocarditis. These patients with undulant fever are apt to be ambulant, going from place to place frequently in search of a diagnosis. That is not the case, after a proper period of duration, with the other diseases. After two or three weeks, the patient is usually in the full throes of his disease and the condition is readily demonstrable. Sweating, fever, fatigability, lack of energy and the loss of strength are characteristic of tuberculosis. There is one striking difference, however, in the sweat of a patient with chronic fibrocaseous tuberculosis, which makes up the major portion of all tuberculosis. It is a sleeping sweat. The patient's temperature drops so suddenly that the perspiration has no time to evaporate and it condenses, and is usually always a sleeping sweat, because of a rapid drop from a high temperature, which is confined to certain topographic areas—the front of the chest, the forehead, the front and back of the legs and thighs—in contradistinction to the sweat of undulant fever or other types of fever. While the patient with undulant fever may have a sleeping sweat, he also sweats while he is still awake and his sweating is not confined to certain topographic areas in the case of undulant fever. His body is bathed in a general body moisture throughout. A tuberculous patient's body during the day is hot and dry. He may have axillary perspiration and perspiration on slight exertion, but not the typical, drenching sweat that is seen with these other types during the day, in which the entire body is wet with perspiration.

DR. F. C. E. MATTISON, Los Angeles: I am chairman of the Los Angeles Medical Milk Commission. At the suggestion of Dr. Karl Meyer, we started immediately to clean up our herd in 1927. We found that we had reactors, as we suspected. At the present time there is not a cow under certification in California that is not free from abortus infection, as we have had every cow under certificate tested throughout the entire state. In Los Angeles County, there is a large consumption of milk, not only certified milk but raw milk. We have a production of certified milk in excess of 22,000 quarts a day. I

think Los Angeles County uses more raw milk than any county in the United States. People have been educated to use raw milk. Our pediatricians believe in raw milk and do not believe in pasteurized milk for feeding infants and invalids or for general consumption.

DR. J. P. BUSHONG, Pasadena, Calif.: While I maintain a residence in Pasadena, I am the assistant secretary of the American Association of Medical Milk Commissions. Since arriving in Portland, I have found there is a rather critical discussion between the various authorities here as to the relative safety of pasteurized or raw milk. I thought it would be advantageous to incorporate in this discussion the fact that the American Association of Medical Milk Commissions, at its meeting in Montreal in June, adopted a definite requirement that all cows involved in the production of certified milk be tested, and that all animals known to be infected with *Brucella abortus* be removed. All cows involved in the production of certified milk in California are tested. No bottle of certified milk today, with a cap with the seal of the American Association of Medical Milk Commissions on it, being sold in California, is from a cow other than one negative to the agglutination test. We in California, recognizing the possible importance of undulant fever infection through raw milk, began this program more than two years ago. While listening to the authors' papers today and many others at previous meetings, I have been impressed with the fact that so little is known at the present time relative to the source of undulant fever infection. It behooves all of us to do all we can, whether we are dairy regulatory supervisors, physicians or health governing bodies, to add to the present accumulation of authoritative information everything that is possible to obtain to aid in the crystallization of the present information relative to undulant fever.

DR. JACOB TRAUM, Berkeley, Calif.: Dr. Bushong stated that the various medical milk commissions in California will not permit an animal to supply milk for the certified milk trade unless it is a nonreactor to the agglutination test. Does the enforcement of such regulation insure freedom from the organism in the milk? I believe there is at present sufficient evidence to indicate that as far as undulant fever is concerned there is very little danger from such milk. Five years ago Schroeder and Cotton showed that cattle that were eliminating organisms through their milk were reactors to the test. This work was carried on with a fairly large number of animals, the quantities of milk were large, and many guinea-pigs were used. This work was confirmed by Fitch and Lubbehusen. We have found that an animal may be negative to the agglutination test for *Brucella abortus* and still eliminate organisms in the milk. That, however, is rare. Together with these facts, we should bear in mind that the number of *Brucella abortus* organisms eliminated in cow's milk is usually small, and if by repeated agglutination tests we do fail to detect an animal that is eliminating organisms, the high dilution of that milk with the rest of the milk from a large dairy, I think, practically frees it from danger of infection to human beings. Epidemiologic studies indicate that rather large doses of organisms in milk are necessary to induce the disease in man. The question of freeing herds from reactors by the agglutination test is no longer an experimental one. It has been done in California, in Oregon and in Pennsylvania, and it is being done all over the country. We feel, under the conditions, that as a rule the certified milk, under the rules and regulations of the Commission of California, and perhaps also in other parts of the United States, is rather free from *Brucella abortus* infection.

DR. WALTER M. SIMPSON, Dayton, Ohio: In 1897, Captain M. L. Hughes of the British Army Medical Staff proposed the name undulant fever to replace the geographic designation malta fever. More recently, the Malta Branch of the British Medical Association has sent a communication to medical societies throughout the world asking that the term malta fever be dropped because of the implied geographic limitations, and that the term undulant fever be adopted for the now world-wide disease. It has been repeatedly stated in the literature on undulant fever that the clinical diagnosis is made with great difficulty. I believe this is due to the fact that physicians have not been aware of the characteristics of the disease. In sixty-three cases which I have investigated in Dayton, Ohio, an initial clinical diagnosis of undulant fever was made in more than 30 per cent. Reference has been made to the relative absence of the disease in children. There is, apparently, a relative immunity in children. Veterinarians have long observed a similar immunity in calves. I have carried out agglutination tests and bacteriologic studies in sixty-two cattle, including four calves, of five herds which supplied raw milk to some of our patients with undulant fever. All but the four calves showed positive agglutination with *Brucella abortus* and *melitensis*. Nevertheless, in our series of sixty-three cases there were eight children, the youngest 6 years of age. There were no cases of direct porcine or caprine origin. Practically every one of the Dayton patients was a consumer of raw milk or unpasteurized dairy products. Carpenter has pointed out that many cows which eliminate the organism in their milk do not react to the agglutination test. Carpenter and Evans have demonstrated that many human beings with undulant fever, in which the organism has been recovered from the blood, do not show any serum agglutinins, so that the agglutination reaction cannot be regarded as infallible evidence. We need something to supplement the agglutination test. I think that the skin test, utilizing a suspension of killed abortus organisms, holds much promise as an additional diagnostic aid. We recovered the bovine strain of *Brucella abortus* from the milk supply of several of our patients. We also recovered an identical strain from the blood of these patients. Knowing, as we do, that complete pasteurization will destroy the causative organism, I believe that the safest milk is certified milk—pasteurized.

DR. ALLEN H. BUNCE, Atlanta, Ga.: During 1928 we had forty-one cases of proved undulant fever in Georgia, notwithstanding the fact that Georgia had the first law with reference to the control of abortion in cattle. The distribution of these cases in Georgia corresponds almost exactly with the distribution of contagious abortion in cattle. In only four cases have we been able to increase the agglutination titer from 1:600 to more than 1:1,300 by giving vaccines in those chronic, mild types of cases.

DR. A. V. HARDY, Iowa City: In the discussion so much emphasis has again been placed on cattle as a source of this infection that I believe I may ask that we be conservative in drawing final conclusions. It is true that there is a great deal of evidence that points to the fact that undulant fever in human beings commonly comes from cattle, but in view of the fact that there are three times as many infections in males as in females, we cannot hastily come to the conclusion that the infections are even largely transmitted in this way. I should like to leave the impression that though much is known concerning this disease, there are still many questions yet unanswered. I should like also to emphasize that in the answering of these questions the cooperation of all physicians is necessary. The U. S. Public Health Service has a program well under way which we hope will do much to aid in the advancement of the knowledge regarding undulant fever. Moreover, the National Research Council Committee on Contagious Abortion is planning to conduct further study, with the assistance of the research fund from the Committee on Research of the American Medical Association. In all of these projects by far the most important thing is the interest, the cooperation and the assistance of practitioners.

DR. WALTER L. BIERRING, Des Moines, Iowa: In order to make a positive diagnosis, we shall have to rely on either a positive agglutination test or a demonstration of a positive blood culture. The prognosis is one of the most difficult problems connected with undulant fever. There seems to be no way by which one can indicate the length of time that this disabling disease will continue. I am sure that is the phase we shall have to consider from an economic point of view—the fact that there comes an illness which continues through weeks and months and a convalescence which often lasts just as long. The other important point to remember is that at least in certain states this is developing into an occupational disease. That brings it within the field of industrial medicine. So it is of

the highest importance that it be recognized early with reference to its prognosis. With reference to its treatment, I see little hope in the use of vaccine, because this is a condition in which, with its high agglutination titer, antigen bodies are being formed in high amounts. It is possible that an antibacterial serum that is now being developed may promise something. In the meantime, observation and symptomatic treatment and care in convalescence are going to do the most for the average patient.

CONTROL OF IMPETIGO NEONATORUM

ADVISABILITY OF A RADICAL DEPARTURE IN OBSTETRIC CARE

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During the past few years there have been frequent reports of epidemics of impetigo occurring in the obstetric divisions of general hospitals. These reports have been comprehensive as to the terminology of the infection, its symptomatology and apparently as to advice for epidemic control. Repeated invasions and recrudescences of the disease at the Sutter Hospital during the three years 1925 to 1928, despite consistent application of the most elaborate control measures, finally caused the medical board to adopt a radical change involving the entire routine of the obstetric division. The conviction was born of our experience that, to solve this serious problem adequately, many time-honored concepts must be abandoned. We were forced to the conclusion that our nursery system, the one in vogue at the present time in most American hospitals, stood under severe indictment. We have therefore abolished it.

It is my purpose to describe the new routine of our obstetric division, which has been in force since May 1, 1928. I believe that our present radical departure in the care of mothers and babies is of distinct advantage in offsetting the tendency to the invasion and spread of the epidemic skin infections of the newborn. First, however, it might be of interest to mention some of the changes that preceded the adoption of our present system.

The obstetric division of the Sutter, a general hospital of 185 beds, occupies the east wing of the fourth floor. The occupancy of the west wing of the floor is restricted to clean surgical cases. When the capacity of the obstetric wing, twenty-one mothers and babies, has been reached, patients are received in the west wing. The original nursery occupied a large room with northern exposure. Following our early experience with impetigo this nursery was converted into a four-bed ward, and a roomy solarium with southern exposure and glazed to admit ultraviolet rays was utilized for the purpose. Previous to April, 1928, the twenty babies in this nursery were housed in carriages, four babies to a carriage, each baby, of course, occupying an individual bassinet. They were cared for by two nurses giving their full time during the twelve-hour day and one nurse during the twelve-hour night period. Shower bathing was abandoned early in 1927 in favor of individual basins, sterilized daily. All garments, diapers, towels and toilet articles are supplied by the hospital. A large table with monel-metal top was used for bathing and changing babies. The nurses were carefully selected as to previous training and experience, and they observed every possible precaution in handling the babies to maintain at all times a high standard of aseptic technic.

Despite these changes—moving the nursery to the solarium with southern exposure, the introduction of individual set-ups for babies, the sterilization of all infant supplies and a more rigid exclusion of visitors—in March and April of 1928 we experienced our worst epidemic. This epidemic began in the latter part of February as an impetigo with a few discrete lesions on two babies and a paronychia in three babies. In March the babies that became infected displayed numerous impetiginous skin lesions with now and then a case of paronychia. Toward the end of March several babies, showed large bullous lesions of pemphigus, and in April the dreaded dermatitis exfoliativa appeared. Twenty of sixty-seven babies (30 per cent) born during the months of March and April were infected. Fortunately there was no mortality. It was most discouraging, however, to the obstetric committee of the staff and to the hospital management that, after nearly two years of concerted effort and considerable expenditure of funds, the problem remained unsolved.

The epidemic of February-May, 1928, was introduced by a mother with a small skin lesion on the anterior surface of her forearm. Our routine called for a full bath and shampoo of mothers on admission. Women with detected skin lesions are not admitted to the fourth floor. In this case the lesion was overlooked at the time, but it was learned that a child in the family had recently recovered from an impetigo and that the mother had had a few lesions as well. The first lesion in the new-born occurred on the posterior surface of the neck of this woman's baby, having apparently been infected by the mother as she lay in bed supporting the baby's head during nursing.

Our conclusion as to the rapid spread of the disease was that our two nursery nurses had contaminated their charges during the early hours of the infection in the baby mentioned. There must always be an interval at the beginning of an epidemic, a stage of contamination or very early unrecognizable infection when the fingers of nurses may carry the organisms in a widespread manner. Theoretically a technic could be devised that should render this spread of infection impossible. Such a technic would necessitate a general nursery equipped with individual "set-ups" for each baby, including thermometers, drums of sterile supplies with foot pedals, water taps with foot-pedal releases, and sterilizers for repeated sterilization of all instruments used. The physicians would be required to wear sterile gowns on entering the nursery, the nurses changing gowns each time a new baby was taken up and being required to scrub hands five minutes between handling babies and to go through antiseptic solutions, or to wear rubber gloves. Aseptic technic developed to the *n*th degree in the nursery becomes an absurdity because it is manifestly not practical. It fails completely because of the texture of the feminine human skin. The nurses' hands will not tolerate the repeated scrubbing and immersion in antiseptics necessary to keep them free from the staphylococcus, and rubber gloves that permit the necessary deft handling of the babies will not tolerate safety pins. Another manifest absurdity of the sterile, aseptic nursery idea is that seven times in twenty-four hours the little aseptic bundles are wheeled or carried out to their mothers, who are entertaining visitors, receiving and handling presents for the baby, and reading hospital

literature. When one has pursued this idea to its logical conclusion one is driven to the necessity of insisting that mothers check all their belongings on entering the hospital, that they wear only garments that have been autoclaved, receive no visitors or mail and read autoclaved literature—an absurd and intolerable situation.

On reaching this point in prevention technic one is prepared to lead a "Back to the home obstetrics" crusade. Under home conditions, unless there is impetigo in the house, this infection is unknown. Impetigo as an epidemic disease of the new-born owes its origin to the general nursery. It seems self-evident, then, that the present-day general nursery is under severe indictment and should be abolished. How may this be done? By putting the baby in the mother's room? Immediately many objections arise. Interruption of the mother's needed rest by the colicky baby, exposure of the baby to respiratory and other infections introduced by the mother's visitors, greater difficulty in bathing and caring for the baby in comparison with the well equipped nursery—these are objections which, while not unsurmountable, are at least valid to a degree.

The impracticability of caring for mothers and babies in the two and four bed wards is self-evident. In our extremity we even considered abolishing wards and initiating a system whereby three mothers and three babies, each mother with her baby occupying a single room, should become the charge of an individual nurse working a period of eight hours. While this might add materially to the expense of nursing care, we believed it would greatly minimize the chances of spread of neonatorial infections.

Our present system is a compromise or an elaboration of this basic idea. As first instituted, the babies were placed in three small nurseries, each nursery accommodating but six babies. Under the previous system as many as twenty-four babies had been cared for in a single nursery. The four-crib perambulators were eliminated in favor of baby units designed by our former superintendent of nurses, Miss May A. Hassett, in collaboration with other hospital employees. These units are constructed of metal and comprise a space for the bassinet, a surface for bathing and changing the baby, and a spacious shelf for the baby's individual requisites.

The following are the requisites for each baby unit: one sterile pack, containing one wash bowl, six applicators, one shirt, one baby gown, one band with needle and threads, three safety pins, one baby wash cloth, six cotton pledgets, three diapers and one weigh paper.

In addition, each unit carries the following: one pack of diapers; sterile liquid petroleum, one bottle; alcohol, one bottle; "Baby San" soap, one bottle; boric acid solution, one bottle; one bag of cotton pledgets, and one thermometer in an enamel container. Casters are provided so that the unit may be wheeled into the mother's room for demonstration. Fewer babies to the nursery and these spaced far apart seems rational and is a condition necessarily attained by the employment of these individual baby units.

In May of 1928, the babies were moved into the six-unit nurseries and a radical change was made in the nursing service. Nurses were placed on an eight-hour schedule and were required to care for mother and baby. In the beginning each nurse reporting at 7 a. m. and working until 3 p. m. had three mothers and their babies to care for. Each nurse reporting at 3 p. m. and working until 11 p. m. cared for six mothers and their babies, and each nurse with the 11 p. m. to 7 a. m. schedule cared for nine mothers and babies. This scheme, while fairly satisfactory, was abandoned in favor of the split-hour system, which gives the floor an adequate number of nurses during the peak hours.

SCHEDULE ON OBSTETRIC FLOOR, WORKING EIGHT-HOUR DAY WITH BROKEN HOURS

The average number of patients is twenty-one mothers and babies.

Seven nurses report on duty at 7 a. m., each nurse being entirely responsible for three mothers and babies.

7 a. m.: Mothers are given their morning toilet, and temperatures are taken. Mothers are now ready for breakfast. The nurse goes to the nursery and bathes the three babies assigned to her, not leaving the nursery until the babies' toilet is complete.

9 a. m.: Babies to breasts. The morning charting is done while the babies are nursing. The babies are then brought back to the nursery. The nurse now gives the three mothers assigned to her their baths, with the usual routine care.

BROKEN HOUR SCHEDULE

Seven nurses report on duty at 7 a. m.

Three nurses work from 7 a. m. to 11:30 a. m., and from 3 to 7 p. m.

Three nurses work from 7 a. m. to 3:30 p. m.

One nurse works from 7 to 11:30 a. m., and from 7 to 11 p. m.

One nurse works from 3 to 11 p. m.

Two nurses work from 11 p. m. to 7 a. m.

A nurse works on the 7 to 11 o'clock schedule once a week and the hours from 3 to 11 p. m. during one week in each seven. Therefore, three nurses is an adequate number to care for twenty-one mothers and babies during the hours of 11:30 a. m. to 3 p. m. During these hours the babies are given the usual attention and go to the breast at 12 noon and at 3 p. m. Mothers are bathed and given routine care.

3 p. m.: Four nurses report on duty. Between 3 and 7 p. m. mothers are given the afternoon care and the usual schedule for babies is carried out. In this way, the day nurses have charge of the floor from 7 a. m. to 11 p. m.

COMMENT

A total of thirteen nurses, including supervisor, is necessary under our present scheme for the care of twenty-one mothers and their babies. This is an increase of only one nurse over the previous system of individual maternal and nursery nurses on the twelve hour schedule. I believe it is a small price to pay for the additional security against epidemic neonatorial infection.

During the past year we have had at different times four babies that presented suspicious lesions. These babies were immediately isolated and in no instance was there further development of lesions on these or other babies.

I have noted with interest the development of a very definite and real entente cordiale between our maternal patients and their nurses. The care of the mother and her baby gives the nurse an opportunity of acquainting herself with the characteristics and individual needs of her two charges to an extent not possible under any other system.

SUMMARY

To insure against epidemic neonatorial infections in the obstetric divisions of general hospitals, there should be small nurseries with individual baby units, and the adoption of a revised scheme of nursing whereby nurses are responsible for the care of a limited number of mothers with their babies.

TETANY FOLLOWING THE USE OF COCAINE AND EPINEPHRINE IN INTRANASAL OPERATIONS

OBSERVATIONS AND TREATMENT: PRELIMINARY REPORT *

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Tetany, as defined by Osler,[1] is a

peculiar bilateral spasm of the extremities either paroxysmal or continued. The fingers are bent at the metacarpophalangeal joint and extended at the terminal joints; pressed close together and the thumb contracted in the palm of the hand. The wrists are flexed and the elbows are bent. In the lower extremities the feet are extended and the toes adducted. The muscles of the face and neck are affected at times.

My observation corresponds to this description with one exception; i. e., the fingers are usually separated. I recognized this condition only eight years ago. I am sure it must have occurred many times before but the spasm, as such, went unobserved on my part. I probably considered the patient a nervous, hysterical individual and treated her as such.

CLINICAL SYMPTOMS

In addition to the spasm described, which is always present in true tetany, the following clinical picture is present—the sequence, of course, varying at times:

1. *Increased Respiratory Rate.*—This follows the intervals of breath-holding by the patient during the time when the four applications are made in the nose.

2. *Hyperexcitability.*—Great nervousness, apprehension and anxiety are present. The patient will complain of pain out of proportion to the usual reaction; will continue to moan and groan during manipulation and often even when parts are not being touched. When asked if pain is present the patient frequently responds in the negative but continues to carry on with the nervous manifestations. (Additional anesthetic at this stage exaggerates the symptoms and is contraindicated.) Reassurance is of no avail. The apprehension and anxiety may even go so far as to bring forth the announcement from the patient that death is impending.

Fig. 1.—Position of fingers in tetany.

In one instance, a seasoned nurse who had cared for many of my patients was so convinced by the patient's statements that she summoned the relatives for a last look and word with the "soon-to-be" deceased, when unable to reach me. Other patients may only be humiliated by their actions and reassure those in attendance that they are not in a serious condition.

3. *Pulse Rate.*—This is always greatly increased, often reaching a peak of 120.

4. *Blood Pressure.*—The blood pressure is difficult to record owing to muscle spasms but it is increased.

5. *Onset of Spasm.*—The onset may occur early, within five or ten minutes after the anesthetic is applied, or may be delayed as long as forty minutes.

I believe my method of administering anesthesia is not unusual in any respect:

A preliminary hypodermic of morphine, 1/6 grain (11 mg.), and scopolamine, 1/200 grain (0.3 mg.), is administered forty-five minutes before operation. The nerves—the sphenopalatine and anterior nasal—are blocked by topical application of cocaine mud (cocaine hydrochloride flakes and epinephrine in a dilution of 1:1,000) by the Painter method.[2] The applicators are allowed to remain in position from two to four minutes.

Fig. 2.—Tetany showing separation of fingers.

Frequency of Occurrence.—Twenty definite cases have occurred in my practice since 1921 when I first recognized this symptom complex. Two cases occurred in one morning's operative group. It has always occurred in women between the ages of 18 and 42 of the so-called nervous type. It has never occurred in any other surgical procedure except submucous resection of the nasal septum. Sixteen of the twenty patients complained chiefly of headaches.

ETIOLOGY

I must state in the beginning that I do not know, at this time, the true etiology. At present, we are carrying on investigations which I hope will be helpful.

I do not believe it is a direct intoxication or allergy from cocaine, morphine or scopolamine. These patients did not have the characteristic symptoms of poisoning, such as vertigo, collapse, unconsciousness or convulsions, and there were no fatalities. I have used local anesthesia for sixteen years in every surgical procedure of otolaryngology without a fatality. I have seen many severe cases of intoxication, but in none of these were the symptoms those of tetany. There is a slight possibility that the tetany may be caused by the epinephrine alone, even though a small amount is used.

However, I recently consulted an author of a book on allergy who had administered thousands of doses of epinephrine without having a single case of tetany, even though heroic amounts were given hypodermically.

I have interviewed several obstetricians who use large doses of morphine and scopolamine, and they also have never seen a case of true tetany. There are a few scattered reports in obstetric literature in which morphine and scopolamine have been blamed for the tetany

* Read before the Section on Laryngology, Otology and Rhinology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

1. Osler: Internal Medicine.

2. Painter: Local Anesthesia in Ear, Nose and Throat Operations, Tr. Am. Acad. Otorhinolaryng., 1917.

but not in sufficient number to be given any serious consideration. I am stating these facts to eliminate various toxic drug combinations.

I will classify under two headings what I do believe, at this time, to be the real causes: predisposing and exciting.

Predisposing: 1. Hypoparathyroidism.
2. A nervous, emotional patient who had anticipated with dread a surgical procedure many days before going to the hospital and a number of hours after admission.
Exciting: 1. Hyperventilation.
2. Epinephrine.

These patients will frequently be so frightened when the first application of cocaine and epinephrine is made that they literally hold their breath at intervals for several seconds. This, of course, is continued during the subsequent applications. By the time all four applications are made a certain amount of air hunger exists. This is followed by a series of rapid respirations, which was noted under symptomatology as one of the early manifestations of the impending tetanic spasms.

Duzar and Hensch,[3] in their work on hyperventilation, concluded that forced respiration produced absolute blood alkalinity by reduction of the carbon dioxide tension. They found that, by injection of 0.1 mg. of epinephrine dissolved in from 1 to 1.5 cc. of physiologic solution of sodium chloride intravenously, after six or eight minutes of hyperventilation general tetany could be produced in every child. The strength and duration of the spasm depended on the duration of the preceding hyperventilation.

They also concluded that epinephrine tetany is really a manifestation of respiratory tetany.

Brehme and Popociviu[4] say:

> With our experiments on hyperventilation we noticed that the symptoms of tetany after administration of the epinephrine were much stronger and came much quicker than without this medication. In the very shortest time there could be obtained spasms of such force as we had never seen before. In one case where the breathing had been done especially well, there even appeared a laryngospastic condition. A further symptom that the spasms were stronger was that the blood pressure which we had measured shot up much higher than with hyperventilation alone.
>
> Since epinephrine is to be considered as an excellent stimulant of the autonomic nerves, the supposition follows that, aside from the blood condition, the vegetative nerve system has a part in the occurrence of the tetany phenomenon.

As a summary they state that

> only after finished hyperventilation is epinephrine effective. For this, deficient calcium ionization in the alkalinity is responsible. Epinephrine increases all phenomena of the hyperventilation tetany. Ergotamine, its antagonist, decreases them considerably. The cooperation of the autonomic nerve system with the occurrence of the tetany spasm is thereby made probable.

At this time I want to suggest a purely theoretical hypothesis: there may be a reflex inhibitory action on the nerve mechanism controlling the secretion of the parathyroid extending from the sphenopalatine ganglion (where the cocaine and epinephrine application is made) through the vidian to the cervical sympathetic ganglions.

TREATMENT

If untreated, the tetanic spasms will normally subside in from two to four hours. The maximum intensity is reached in from fifteen to thirty minutes. In the beginning, before I recognized these cases as true tetany, I tried morphine and whisky. The latter seemed helpful in a limited degree only. The last few years I have used, exclusively, parathyroid extract-Collip, 5 cc. containing 100 units, subcutaneously. The spasms are completely relieved in from fifteen to thirty minutes after administration. Ergotamine is advised by Brehme but with this I have not had any personal experience.

CONCLUSIONS

1. Tetany is a frequently overlooked symptom complex following the use of cocaine and epinephrine in the nose. No direct references in the literature could be found.
2. It is not a serious complication, but a very distressing one for the patient if untreated.
3. It is not a drug intoxication.
4. It is not due to a condition or a single drug but to a combination of hypoparathyroidism, hyperventilation and epinephrine in nervous, emotional patients.
5. It is satisfactorily and quickly relieved by subcutaneous administration of parathyroid extract-Collip.

Federal Reserve Bank Building.

3. Duzar, J., and Hensch, V.: Hyperventilation-Tetany, Klin. Wchnschr. **5**: 2111-2112 (Nov. 12) 1926.
4. Brehme, T., and Popociviu, G.: Beiträge zum Tetanieproblem.

ABSTRACT OF DISCUSSION

DR. F. LEAVER STAUFFER, Salt Lake City: I never have recognized one of these reactions as tetany. I have seen patients who exhibited mild nervous reactions after the use of cocaine and epinephrine in the nose, but I can recall only one case which was probably of the type described by Dr. Roberts. This woman showed very distressing nervous excitation and a painful tetanic spasm of the hands which continued for about two hours. About two weeks ago, I witnessed a most terrific spastic reaction of all the voluntary muscles of the body in a young man whom I was cocainizing for a septum operation. He grasped the side of the table and fairly shook it to pieces. It took all my strength to remove one hand from the table for observation, and to my dismay it was tightly clenched instead of being in the typical carpal spasm. This reaction continued for about ten minutes without signs of abating. We gave him a few whiffs of ethyl chloride, which immediately terminated the reaction. He went through the operation exhilarated and joking. I felt that this was an hysterical reaction, but nevertheless it was very annoying to me.

DR. AUSTIN A. HAYDEN, Chicago: I should be greatly interested to know whether Dr. Roberts has found any way in which these cases can be recognized before the cocaine and epinephrine have been applied. If, in the cases which are known to react in this way, he would try the same amount of cocaine with ephedrine substituted for epinephrine, it would be interesting to know whether tetany supervened. If not, then it would seem that the substitution of ephedrine for epinephrine would absolutely eliminate this difficulty.

DR. JOHN F. BARNHILL, Miami Beach, Fla.: It is true that symptoms such as those described by Dr. Roberts do occasionally arise following the injection of local anesthetic preparations, especially in patients suffering from subthyroid function. I have seen one such reaction in a patient whom I was preparing for an alcoholic injection of the gasserian ganglion. In a few instances in which hypothyroidism was evident, I have preceded the injection of the local anesthetic by an injection of thyroid extract, and have reason to believe that this may have avoided unpleasant symptoms subsequently. I should like to know whether Dr. Roberts has had any experience in the preparation of his cases.

DR. J. W. JERVEY, Greenville, S. C.: I have seen three or four of these cases. At first I did not know how to handle them, but I had a belief that the convulsive symptoms that appear in the course of poisoning from cocaine are a serious warning of disaster, so when I first encountered that situation

I was naturally much alarmed. It was brought to me, however, that the physiologic antidotes of cocaine, perhaps the best we have, are the derivatives of barbituric acid, and if one of these preparations was used promptly enough, by ingestion by mouth, very rapid results would occur. I have no doubt that an even more prompt result will occur by the intravenous use of such preparations. Of course, in any case of cocaine poisoning we can use chemical as well as physiologic antidotes, but in each case that I have encountered—four in all, I believe—I obtained very satisfactory results from the use of one of the barbituric acid derivatives. As to the case Dr. Stauffer recounted in which the patient's hilarious frame of mind sustained him through the operation afterward, I have not been so fortunate. My patients, while recovering promptly, were perhaps an hour or two in getting into such a condition that I could consider proceeding with the operation, and therefore in each case, rather than risk the additional administration of cocaine, I have abandoned the operation, unless it was something of extreme importance or urgency, in which case I resorted afterward to a general anesthetic.

DR. HENRY T. BAILEY, Phoenix, Ariz.: In 1923 I reported before this association how to take care of these spasms and cyanotic conditions when they occur in the office. Dr. Roberts no doubt used cocaine with the patient in a sitting position. In the first place, the patient goes without breakfast. The cocaine is used more than once, and if a drop of cocaine flows down the nasopharynx and is swallowed, it is almost equal to using cocaine hypodermically. While I am not sure about this typical tetanic condition, I do know that a cyanotic condition occurs every time the patient swallows a drop of cocaine. I, too, have seen a number of these patients who after resuscitation were in a hilarious condition. As to the treatment, we use a chair that can easily be reversed from the sitting to the lying position, and we lower the head as with a drowning patient—the head low and the feet high.

DR. M. L. TAINTER, San Francisco: When cocaine is used with epinephrine in local anesthesia, the effect of the epinephrine is tremendously increased. Therefore, only such amounts should be used as are entirely ineffective when used alone. This sensitization to epinephrine takes place with cocaine only, and not with butyn and procaine or, as far as I know, with any of the other local anesthetics. Reactions could therefore best be prevented by using one of the substitutes for the cocaine in the anesthetic mixtures. The reactions to cocaine-epinephrine mixtures are frequently seen, but in this particular report take a rather unusual course. It may be that these atypical responses are produced by a diminished blood calcium, which could be corrected by administration of parathyroid extract. It should be borne in mind, however, that this hormone may antagonize convulsants quite independently of calcium-lack through a general neuromuscular depression.

Another point raised is the possibility of substituting ephedrine for epinephrine in anesthetic mixtures. I have found in experimental animals that ephedrine after cocaine has no effect on blood vessels or circulation. In other words, one cannot mix ephedrine with the cocaine and retain the vasoconstriction that is desired for the prevention of absorption. The explanation is that cocaine abolishes the action of ephedrine-like compounds on blood vessels, but increases that of epinephrine. This has been confirmed clinically for the nasal mucosa for both ephedrine and phenylaminoethanol sulphate, so that these should not be used locally in the nose and throat in conjunction with cocaine. Butyn, procaine and probably other local anesthetics do not either sensitize to epinephrine or desensitize to these other amines, and in this connection would therefore offer advantages over cocaine.

DR. LYMAN G. RICHARDS, Boston: In the East there is less tendency to use local anesthesia than in the West and South, and I want to protest against its use in septum operations because of the possibility of the choking, fainting reaction from cocaine. I think that 90 per cent of septum operations in Boston are done under ether anesthesia. As to the point Dr. Bailey just mentioned, that usually the patients are not given breakfast the morning of operation, our hospitals have a tendency, whether the anesthetic is to be a local or a general one, to make it a rule not to give these patients breakfast. We found that by giving the patient a reasonably soft breakfast, the whole mental attitude and feeling toward the operation is changed. Particularly is this so when the local anesthetic is used with the patient in a supine position.

DR. SAM E. ROBERTS, Kansas City, Mo.: Before preparing this paper, I had a search made through the library of the American College of Surgeons, and also the Crerar Library of Chicago. I was unable to find any record of this syndrome. I am glad to know that Dr. Barnhill and others have noted this reaction. I tried to make it especially clear that this was not a cocaine intoxication. The symptoms are not similar, and, of course, there is no true tetanic spasm. In answer to Dr. Hayden, I know of no way to anticipate whether or not a certain patient will have this reaction. One of the discussers wanted to know whether a parathyroid extract could be given in advance to these patients. This could be done, of course, if we knew which ones were going to have the reaction. Dr. Jervey mentioned a convulsive condition. This is not a convulsive condition at all, but a true spastic condition. Regarding the position of the patient during the operation, our patients are always in the supine position. We give them coffee and toast or milk and toast for breakfast the morning of the operation.

TINEA OF THE TOE-NAILS AS A SOURCE OF REINFECTION IN TINEA OF THE FEET*

CHARLES MALLORY WILLIAMS, M.D.
AND
ELSE A. BARTHEL, M.D.
NEW YORK

The present study is offered as an explanation of why some cases of tinea of the feet are difficult to cure and why some relapse repeatedly after apparent cure. It is not claimed that all of the difficult and relapsing cases are of this nature, and the number of cases studied is too small to be used as a basis for statistics. The series proves definitely, however, that tinea of the toe-nails is commonly associated with tinea of the feet, and it is reasonable to assume that the diseased nails serve as foci of infection from which the disease, under favorable circumstances, may spread to the skin. The resistance to treatment of tinea of the nails is notorious.

Such articles as we have seen that deal with tinea of the nails have given us the impression that the descriptions were of the fingers and not the toes, probably because patients demand treatment for these deformities and are not concerned with their feet as long as locomotion is not interfered with. The textbooks speak of friable nail, separation of the nail from the nail bed and heaping up of material beneath the free border, and these conditions are illustrated by photographs.

Presumably, the disease may produce in the toe-nails the same lesions that appear on the finger-nails, but the picture is altered by two additional factors—the presence of other organisms, and the local heat and moisture. The presence of other organisms in the toe-nails is just beginning to receive some of the attention that it deserves. Any one who has examined the feet of dispensary patients, and of many office patients too, must have been struck by the enormous number of abnormalities. The great toe-nail is often yellow, overgrown and thick, with heaped-up masses of adherent detritus under the free border. The line marking the separation of the free edge from the base is often very irregular. The surface is marked with transverse ridges

* Studies from the New York Skin and Cancer Hospital.
* Read before the Section on Dermatology and Syphilology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

or fine longitudinal striae. All these changes may be observed, to a greater or less degree, in the other nails also, while the little toe-nail is often no more than an insignificant stump. We do not pretend to explain these frequent abnormalities, but labeling them onychogryphosis, eczema or onychia adds nothing to our knowledge.

Fig. 1.—Cuticle at the base and sides of great toe-nails positive for tinea.

Examination of clippings of these nails after soaking for twenty-four hours or more in 30 per cent potassium hydroxide will almost invariably reveal *Monilia* in enormous amount, while culture yields *Monilia* in a large percentage of cases. We do not know whether the *Monilia* is pathogenic or saprophytic. While studying this organism, a study that was interrupted by the work which is the basis of this paper, one of us was surprised by the great frequency of its occurrence even in nails which show but slight evidence of disease on casual inspection. In a few of the specimens, fragments of segmenting mycelium were observed, which at first were disregarded as possible contaminations; more careful study, however, convinced us that they were ringworm organisms, an opinion which was later confirmed by culture. In the past few months we have seen forty cases of tinea of the feet in which examination of the toe-nails showed the presence of ringworm organisms. The existence of tinea unguium is no new discovery, and the disease might well be expected to occur as a complication of tinea pedis, although, as far as we know, the coincidence has never been emphasized except by Hodges [1] and Semon.[2] The point we wish to make is that in many of these cases the infected nails show no deformity that would not ordinarily attract attention. They show a slight discoloration, a dull instead of a shiny surface, a few fine longitudinal striae, and nothing more.

There are several peculiarities of tinea unguium as seen on the feet which deserve particular attention. In the first place, the appearance is different on the different toes. The great toe seems to be less frequently affected than the others, to judge by its appearance. In severe cases, it may be greatly thickened and discolored, undermined from before backward for the greater part of its length, though how much of this deformity is due to tinea and how much to other causes is uncertain. We believe that tinea by itself does not produce this great deformity, which is either trophic in nature or caused by other organisms. In many cases the great toe-nail will show along its sides, where the nail substance is overlaid by skin, a slight superficial flaking, fine lamellae of horny tissue still attached at one edge. In one patient both great toe-nails were thus affected, and on one toe the separation of the superficial layer had progressed from the side of the nail along the base, close to the skin, nearly to the other side, leaving by far the greater part of the nail perfectly normal. In this case, *Trichophyton interdigitale* was cultivated from the scales at the edge and from those at the base of the nail. This case is instructive, for it proves that ringworm of the nail can be very superficial, involving the sides and base but leaving the greater part of the thickness unaffected. The second, third, fourth and fifth nails are progressively smaller and often more and more overlaid by the skin at the base, till the fifth nail may project upward from the bottom of a cleft, always warm and moist, and be barely visible unless the skin is pulled back from it.

In all these nails the disease seems to begin usually at the free margin and to progress backward to the base, remaining superficial and destroying the dorsal layer but leaving a considerable thickness of nail tissue on the nail bed. This lower layer usually shows fine longitudinal striae on its surface and is fringed at its distal extremity. The loss of the dorsal layer is not noticed unless the nail is examined with a lens. The destruction of the dorsal layer may proceed quite to the base of the nail or it may stop at any point on the way, and the progress may be more rapid on one side than on the other. This advancing border and the remains of the dorsal layer are most likely to yield the invading organism. Nevertheless, time and again, we have examined, nails which, as far as we could see, were of exactly this appearance, on feet known to be infected with tinea, and have not found ringworm. Most of our positive observations have been made on material obtained from the fifth toe-nail, because this was usually the nail which showed the most evident signs of disease and therefore was the most frequently examined. We have not made routine examinations which would show the percentage of infection of the various toe-nails.

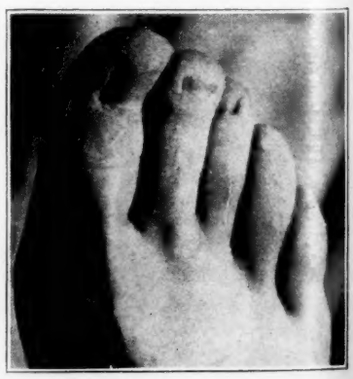

Fig. 2.—Thickening of the cuticle at the side of the great toe-nail. Positive for tinea.

The duration of infection in these patients is difficult or impossible to determine. Most patients are not aware of any disease of the nails; many of them are not even conscious of disease of the feet. The patient whose great toe-nails have been described came to us on account of a dry and scaly condition of the hands which may or may not have been tinea. Most of the patients give a history of repeated attacks of dermatitis of the feet, often over a period of several years. We believe that the infection usually begins in the skin of the feet and spreads thence to one or more nails, which retain the infec-

1. Hodges, R. S.: Ringworm of the Nails, Arch. Dermat. & Syph. **4**: 1 (July) 1921.
2. Semon: Brit. J. Dermat. **34**: 397 (Dec.) 1922.

tion long after the symptoms of the skin have subsided. We cannot say how long the infection may remain quiescent in the nails—the work is still too new—but we have several patients whose skin is now apparently normal yet whose nails still contain the parasite. The following case histories illustrate most of the subjects dealt with in this paper:

REPORT OF CASES

CASE 1.—In I. M., a woman, aged 32, a bookkeeper, the disease began as a vesicle on the left foot in June, 1927, and persisted till December, 1927, relapsing about three months later. When first seen by us in June, 1928, there was a severe vesicular, in many places multilocular, dermatitis on the sole and heel of the left foot. There was very little interdigital maceration. The fifth toe-nail of the left foot was small, slightly discolored and soft at the free margin. The patient received Whitfield's ointment and two roentgen exposures of one-fourth unit each on the left foot. Four days later there were tiny vesicles on the sides of the fingers, which persisted for only a few days. Within ten days of the first visit, the dermatitis was subsiding rapidly and a month later it had disappeared. There was still a little discoloration on the inner surface of the left heel in October, and late in March, 1929, there was a mild relapse. Extemporaneous specimens from the skin of the foot and from the fifth toe-nail showed mycelia in large numbers, and culture yielded *Trichophyton interdigitale* from both. Later examinations of the skin were always negative, but mycelia were found in the fifth toe-nail as late as April 30, 1929. This nail was always small and soft, and the dorsal surface was marked with fine longitudinal striae.

Fig. 3.—Typical infection of the fifth toe-nail and thickening of the cuticle of the third nail.

CASE 2.—A. A., a man, aged 47, showed tinea cruris (confirmed by the microscope) and mild intertrigo between the toes. He said that he was subject to attacks of itching feet, especially in summer. When seen again, seven years later, he still had tinea cruris and also a scaly and vesicular dermatitis on both feet and mild interdigital intertrigo, while the fifth toe-nails of both feet were slightly opaque, with fine longitudinal striae. Mycelia were demonstrated from the groins, both feet and the fifth toe-nail of the right foot, but the cultures yielded no recognizable ringworm organism.

METHOD OF EXAMINATION

In the preparation of material, the skin and nails were freed from foreign material as far as possible and were swabbed with alcohol. Small fragments were then removed with clippers and placed on a flamed slide. It is not practical to cut off a large fragment and then try to divide it into smaller ones. Some of these fragments were immediately planted on Sabouraud's agar, while others were placed in test tubes containing from 15 to 30 per cent potassium hydroxide solution. The labeling of all test tubes was specific, so that we could always tell where each specimen came from. The layer of potash should be at least three-fourths inch (19 mm.) deep, as otherwise "fishing" is difficult. After standing twenty-four hours or longer at room temperature, fragments were removed by a glass tube, placed on a slide and covered but not heated. Excess of solution was then removed by means of blotting paper from the edges of the preparation. As the potash flows out into the paper, the weight of the cover glass and the capillary attraction flatten out the specimen into a very thin layer. If the preparation is to be preserved for a few days, a drop of glycerin may be placed on the slide at each side of the cover glass, after the excess of potash has been withdrawn, and allowed to flow under, which it will do gradually. This method, though crude, is rapid and effective, but undoubtedly more

Fig. 4.—Typical deformity of the base of the fifth toe-nail.

refined means would give a greater percentage of positive results. We have had no success with heating in potash and examining immediately.

The organism revealed by this method appears in two forms. The most common occurrence is in chains of sporelike elements, each element being round, oval or somewhat elongated. Less frequent are skeins of mycelia, looking like a tangled mass of thread. It seemed at first as if these might be two different parasites, but both gave *Trichophyton interdigitale* on culture and at last a field was found which showed a typical skein, a few strands of which were breaking up. Occasional mycelia showed such a great variation in size and shape of the segments that we hesitated to commit ourselves on the observations made by the potassium hydroxide method. The length of the mycelial threads was fully

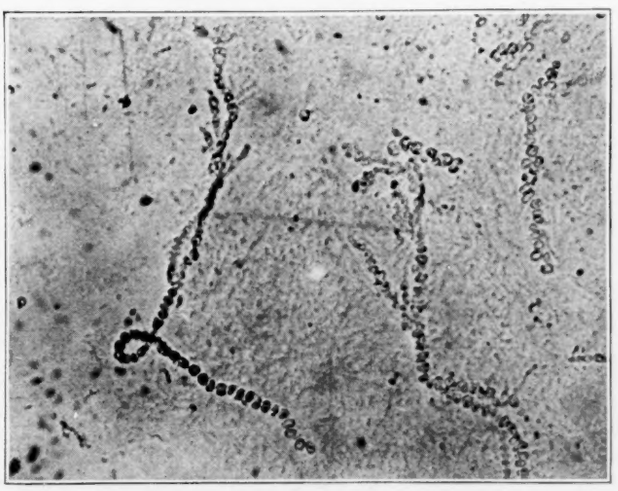

Fig. 5.—Potassium hydroxide preparation from nail, photographed on the day it was made.

as great as that of any found in the skin but of greater variation in form, possibly the result of the environment.

The lack of variety in the tinea cultures was surprising and somewhat disappointing, practically all of them belonging to the *Trichophyton interdigitale* group. It was interesting to observe that in most of our cases the organism from the nail was identical with that in the scales. Dr. Weidman ran through our series on both

agar and hanging drop and confirmed our diagnosis. He decided that they were all *Trichophyton interdigitale* with the exception of three. These showed such differences in the folding and depression of the center of the colonies that he was unwilling to class them as *Trichophyton interdigitale*. They must be produced by a nearly related organism, however, and we are not convinced that the differences observed are specific.

This study has not concerned itself with therapeutics. Most of the patients have received the ordinary treatment with iodine and Whitfield's ointment, with an occasional dose of x-rays, and have been relieved of all cutaneous symptoms. The nails have remained practically unaltered and have been shown to contain the parasite, by culture or extemporaneous examination, or both, at various periods up to ten months after the discovery of the organism in them. We have hesitated to advise prolonged roentgen treatment on account of the expense and time required and also because of the uncertainty of the result.

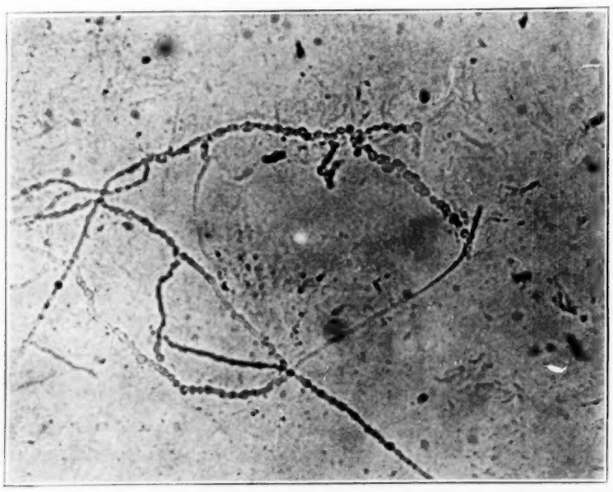

Fig. 6.—Potassium hydroxide preparation of the nail shown in figure 5, photographed three months after making. Excellent preservation.

SUMMARY

1. In a series of forty cases of tinea pedis, an organism of the ringworm group was recovered from the toe-nails.
2. The abnormality of the toe-nails was so slight that the patients were seldom aware of it, and an examining physician would ordinarily disregard it.
3. The infection persisted in the nails long after all cutaneous symptoms had disappeared.

CONCLUSION

Infection of the toe-nails, with insignificant symptoms, is a common source of reinfection in tinea of the feet.

114 East Fifty-Fourth Street—17 West Fifty-Fourth Street.

ABSTRACT OF DISCUSSION

DR. FRED D. WEIDMAN, Philadelphia: Of course every dermatologist is familiar with the type of nails the authors have described. For a long time I think some of us, at least, have suspected that the nails, as well as the well known position between the fourth and fifth toes, might be a reservoir for the spread of fungous conditions on the body, but it has remained for the authors to establish the fact that the fungus is present. It is the old story of making a fact out of what has heretofore been conjecture. One important point brought out is that cultures can be secured; there is a great deal of skepticism abroad about the feasibility of taking cultures in cases of ringworm. But it can be done. Again, the fungus may be present in a heretofore unsuspected position; that is, in the thin, transparent fold of material which may be present near the free margin of the nail fold at the base of the nail. If any of the members care to get additional first-hand information on this subject they can find it by visiting the scientific exhibit of this section. There the authors have an elaborate and painstaking exhibit of this thesis in all its details.

DR. JEFFREY C. MICHAEL, Houston, Texas: There is one type of nail infection which the authors did not show, and it is the only one I know of that can be diagnosed from the clinical appearance alone. It has a mat white surface which can readily be scraped off, and is composed almost entirely of fungous elements. There may be one or more spots on the affected nail. The authors have pointed out the function of the nail as a residual focus. The question of getting rid of tinea of the nail arises. I have tried many methods of treatment but have found it difficult to eradicate. The best thing I have used has been the solution, suggested by Dr. Morrow, of chrysarobin in chloroform. Do the authors know of a satisfactory treatment for tinea unguium?

DR. SAMUEL AYRES, JR., Los Angeles: I should like to know what methods have been used to prevent reinfection from the shoes and from the floor of the patient's bedroom. I feel that these are possible sources of infection. I have had my patients use dusting powder of thymol iodide in the shoes and formaldehyde fumigation to sterilize the floor. I wonder whether the authors have any suggestions in this regard that might be more successful.

DR. JOHN B. KESSLER, Iowa City: I have had a great deal of difficulty in the treatment of these conditions trying to find a remedy of value. I started in with Whitfield's ointment, but some one suggested the addition of zinc oxide and starch, which made a stiff paste. They advised bathing the feet in hot water at night, removing the ointment and then applying the modified Whitfield's ointment. I have had considerable hospital experience with this and it has proved to be the best treatment for tinea of the hands and feet that I have used. An attempt to sterilize the bath floors would be an excellent idea. If the débris is removed from under the nails and the ointment applied it will materially lessen the chances of transplanting the tinea.

DR. CHARLES MALLORY WILLIAMS, New York: Dr. Weidman spoke of cultures and it may be well to say a little more about the technic. The nails were in all instances carefully washed with alcohol so as to avoid contamination so far as possible. I do not know how to cure tinea of the nails and I do not know any one who does. Chemical methods are improving, but are as yet uncertain. We were enthusiastic for a time about Whitfield's ointment, but later it failed. I am using iodine to keep the disease under control. Avulsion has been tried but there have been recurrences afterward, so I would hesitate to recommend avulsion of the toe-nails that are giving no trouble to the patient or any one. I have never recommended it except in the one case of the man with a painful large toe-nail. For prophylaxis, of course, I would recommend sterilization of the clothing; but as the most common source of the spread of the infection appears to be the bath houses or the gymnasiums, I think the most effective thing is the thorough cleansing of the floors of these places and the throwing away of wooden slats and mats of all sorts that cannot be sterilized, and insistence on the wearing of some kind of slippers by all who visit bath houses.

The Master Word in Practice.—The sick person who is conscious is, in esse or in posse, an epitome of all the emotions. With apprehension, fear, hope, nostalgia and pain, his subjective state is to him all important. How familiar the formula linking mind and body! But which of us times without number has not groaned with chagrin at his own dulness of perception that the master word in practice is confidence, faith; a state of mind in the patient which has well nigh endless power to help our treatment; the loss of which makes us but exalted mechanics.—Sewall, Henry: Ours Is the Power, *Colorado Med.*, September, 1929.

EYE EXAMINATION OF SCHOOL CHILDREN *

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SAN FRANCISCO

George Bernard Shaw [1] in "Mainly About Myself," his preface to "Plays: Pleasant and Unpleasant," offered the following explanation why he did not succeed in fiction:

> [I received] a clue to my real condition from a friend of mine, a physician who had devoted himself specially to ophthalmic surgery. He tested my eyesight one evening, and informed me that it was quite uninteresting to him because it was "normal." I naturally took this to mean that it was like everybody else's; but he rejected this construction as paradoxical and hastened to explain to me that I was an exceptional and highly fortunate person optically, "normal" sight conferring the power of seeing things accurately, and being enjoyed by only about 10 per cent of the population, the remaining 90 per cent being abnormal. I immediately perceived the explanation of my want of success in fiction. My mind's eye, like my body's, was "normal": it saw things differently from other people's eyes, and saw them better.

Whether we agree with Shaw's explanation as to his lack of success in fiction and the percentage of people who have "normal" vision, the importance of normal vision in school children cannot be overestimated.

A serious handicap in the school child's education is defective vision. Defective vision not only may cause actual suffering to the child but may greatly interfere with his education. Poor vision may result in mental retardation, the development of an inferiority complex, and even juvenile delinquency, because the child "saw things differently from other" children, and saw them worse.

Wilder,[2] who reported a survey done at Chicago, stated aptly:

> This survey demonstrated the importance of eye examinations in the schools, for it is obvious to any intelligent person that a school child with the handicap of defective vision will have great difficulty in keeping up with the classwork or may fail utterly. Furthermore, even if vision is good and there exists a refractive error of the eyes such as hyperopia or astigmatism, the resulting eye-strain may cause lassitude, drowsiness, eyeache, headache, and other nervous disturbances. Then naturally follow inattention, lack of concentration and interest, and inability to keep up with the work. For reasons of this kind a child may fail to make the next grade, becoming a repeater, and may even be withdrawn from school under the idea that he is backward, all for lack of a careful examination and a pair of properly fitting glasses.

The National Society for the Prevention of Blindness [3] made a statistical study of school children examined in the United States in 1922-1923. The proportion of defective vision varied from 6 per cent in Tennessee to 13.4 per cent in Virginia. The average for 2,279,331 children was 12 per cent. This study showed that there appears to be a lack of understanding as to what should be considered defective vision when children are examined at school. This varied from 20/20 to 20/50, as read on the Snellen chart. Half of the points reported considered 20/40 as defective. The eye examination is done at some schools by the teacher, at other schools by the school nurse. In many places the inspection is conducted by medical school inspectors. Some cities have ophthalmologists on the medical staff who assist in and supervise the examinations.

Newmayer [4] has said: "Great differences in percentages of defective vision are due to a variability of what constitutes 'defective' and the methods of examination." I think that the main reason for the lack of a proper standard and the differences in the observations of different examiners is that the examination is often done under unfavorable surroundings and is made by unqualified persons. The vision may be taken in the class room, in an auditorium, or in the nurse's room. The arrangement of the nurse's room may be such that vision at 20 feet cannot be taken. The lighting conditions are often poor in the examining room; often there is no artificial illumination for taking vision on dark and foggy days. The examiner is forced to take the vision under various lighting conditions and in narrow surroundings which do not allow the test to be done at a standard distance.

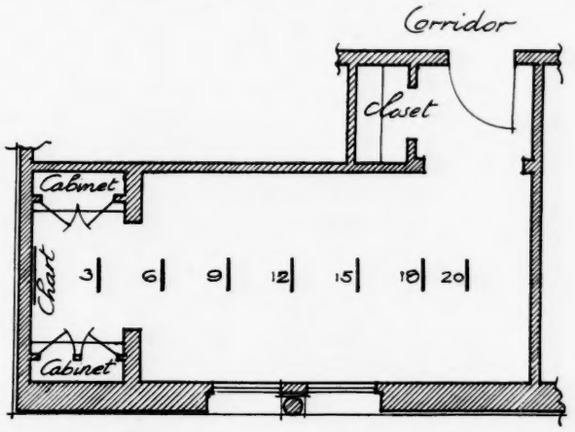

Fig. 1.—Architect's plan of the nurse's room, showing the floor arrangement to allow the taking of vision at 20 feet and the floor marked off at intervals of 3 feet.

Wood [5] has stated: "The methods of testing, recording and classifying the conditions or types of eyesight among school children should be made as nearly uniform as conditions will permit." In this paper I am outlining an arrangement of the nurse's room which would be ideal for eye examinations; methods for quick and accurate taking of vision, and a definite standard of what should constitute defective vision in school children. This is based on my examination of more than 15,000 children in the last three years.

WHO SHOULD EXAMINE THE SCHOOL CHILDREN?

The question of who should examine the eyes of the school children is still unsettled. According to Terman,[6] "Dr. Frank Allport, Dr. R. C. Cabot, Dr. Myles Standish, Dr. Clarence Blake and other oculists of the highest standing have long contended that the ordinary routine examinations of the eyes should be undertaken by teachers and school nurses." Newmayer,[4] on the other hand, "does not agree with many

* From the Division of School Health Inspection, Department of Public Health, William C. Hassler, M.D., health officer.

* Read before the Section on Ophthalmology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

1. Shaw, Bernard: Plays: Pleasant and Unpleasant. The First Volume, Containing the Three Unpleasant Plays, London, Constable and Company Ltd., 1912, pp. vi-vii.
2. Wilder, W. H.: Necessity for Correcting Remediable Eye Defects in School Children, Am. J. Ophth. **11**: 29 (Jan.) 1928.
3. Conserving the Sight of School Children, New York, National Society for the Prevention of Blindness, 1928, pp. 6-8.
4. Newmayer, S. W.: Medical and Sanitary Inspection of Schools, Philadelphia, Lea & Febiger, 1924, pp. 246-256.
5. Foreword (footnote 3).
6. Terman, L. M.: The Hygiene of the School Child, Boston, Houghton Mifflin Company, 1914, pp. 269-270.

of the writers on this subject that the testing of vision can be performed by teachers and others."

I am under the impression that the distinguished ophthalmologists who hold that the examination of school children's eyes can be done by teachers or nurses have never examined many children in schools. They would

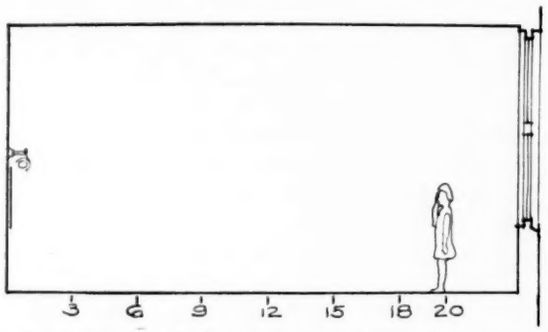

Fig. 2.—Section through the nurse's room showing the location of the chart with a flexible bracket light attached to the wall.

have observed that even an experienced ophthalmologist may find it difficult at times to decide whether a child has an eye defect, and with all due respect to them I contend that the only ones who are qualified to take the vision of the children are the medical school inspectors, and this should be done as a routine, when the physical examination of the child is being made. This work can be assisted and supervised by an ophthalmologist, if there is one on the school inspection staff. The examination should be done in the nurse's room, where the routine physical examination is usually made.

THE NURSE'S ROOM

In arranging the nurse's room, two points should be kept in view. No expensive apparatus is desirable, as any expensive equipment would be opposed by the boards of education, and, further, elaborate optical apparatus is not essential. Second, there are about 25 million school children, and it is important that as many of them as

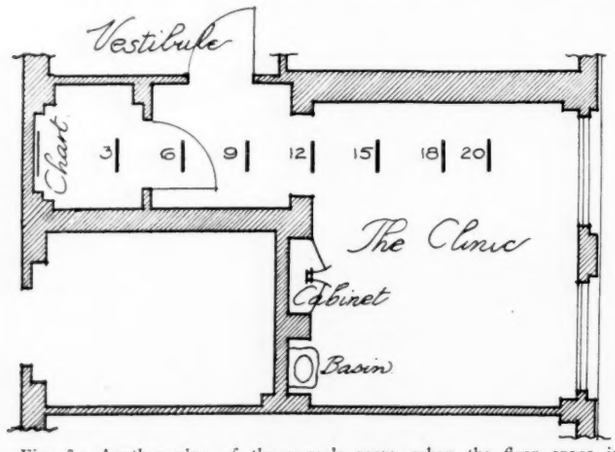

Fig. 3.—Another plan of the nurse's room, when the floor space is reduced, which avoids sacrificing the 20 foot distance for the taking of vision.

possible be examined every year. An arrangement that will not call for any extensive expenditure and will allow for a rapid and accurate examination of the eyes is desirable. Although it is the aim of the examiners to make as complete an examination as possible in their inspection, nevertheless methods should be simplified to permit them to test many children thoroughly.

The usual width of the rooms in school buildings is about 24 feet. This allows the nurse's room to be so arranged that the vision may be taken at 20 feet. One side of the room is used for the test. A flexible bracket light is attached to the wall. The flexible bracket is desirable, so that it may be adjusted to the necessary height. A reflector is used over the electric lamp to illuminate the chart. Burnap and Jackson[7] have recommended either a 60 or a 100 watt daylight blue lamp, or a 50 watt clear lamp. No permanent chart is needed, as children may readily learn the letters when visiting the nurse's room. The floor space is marked off at intervals of 3 feet. Figures 1 and 2 show an architect's plan for such a room. When it is necessary to reduce the size of the nurse's room, this can be done by arranging the floor space without sacrificing the 20 foot distance, at which vision is to be taken, as shown in figure 3. Some such plan for the nurse's room should be incorporated in the building of new schools. In old schools where the illumination is unsatisfactory for the testing of vision, a bracket light can be installed at a small cost.

Fig. 4.—Children in line with their backs to the chart, with one child reading the chart.

Such a plan as this will permit the taking of vision at a standard distance and under uniform conditions.

METHOD OF TAKING VISION

The children are examined in groups of about ten. Before the routine physical examination is begun, the vision should be tested. The external eye examination can be done along with the physical inspection. The children are formed in a line (fig. 4) with their backs to the chart on the wall, and are examined one by one. A child to be tested stands at the required distance and the left eye is covered by a small card placed obliquely along the nose (fig. 5). This should be watched so that the point of the card does not press on or into the eye. If the child wears glasses, the vision should be taken with them on. For the sake of uniformity, the vision of the right eye is taken first.

A Snellen chart or some other similar chart showing the 30 foot line and those below is fixed on the wall at the level of the child's eyes, and the bracket light adjusted over it. The child is asked to read the second line, the 20 foot line. If he is unable to read the 20

7. Burnap, R. S., and Jackson, E. C.: The Illumination of Snellen Charts: An Investigation of Practice and Recommendations for Standardization, read before the Twenty-Second Annual Convention of the Illuminating Engineering Society, Toronto, Canada, Sept. 17-20, 1928, p. 21.

foot line, the child is asked to read the top line, the 30 foot line. The card is now placed over the right eye, and the vision of the left eye is taken in a similar way, the child reading the letters from right to left. If the child is unable to read the 30 foot line, a regular chart showing the letters for all distances is placed on the wall and the child is requested to read the smallest letters he can. If the child is unable to read any of the letters, he walks toward the chart till he can see the top letter, and the distance from the wall, as marked on the floor, at which the child can see the 200 foot line is noted.

It is well to mark on the child's health card, which is usually kept by the nurse, the date of the test and the child's vision, if the vision is defective, so that it may be compared with the vision obtained at a subsequent test, to see whether there has been any further loss of vision. If the child is wearing glasses, a note to that effect should be made. When the child is found to have an eye defect, the parents should be notified on

Fig. 5.—The proper way to cover the eye with a card.

the prescribed form, used by the nurse for the notification of defects, and the nurse should follow up the case, as prescribed in her regulations.

STANDARDS FOR NORMAL VISION

It must be remembered that young children cannot be standardized like adults, and in taking their vision this should be kept in mind. Children attending the kindergarten and the first five grades may know their letters thoroughly and yet may have some difficulty in interpreting their visual impressions. The following standard is recommended for these children: While standing on the 15 foot line they should be able to read the 20 foot line on the chart with their better eye and the 30 foot line, or better, with the other eye. Any vision below that should be considered defective. For children of the higher grades, the standard recommended is that while standing on the 18 foot line they should be able to read the 20 foot line on the chart with the better eye, and the 30 foot line, or better, with the other eye. Anything below that should be considered defective vision. These standards will allow for the variations due to age and intelligence in the child's ability to interpret the letters, and for the lack of ideal surroundings that are usually found in an ophthalmologist's office.

The question is often asked: How many letters in a line should a child read properly to be considered within the normal limits? A child should read at least two thirds of the letters.

Fig. 6.—Children getting acquainted with the "funny little animal."

EXAMINATION OF YOUNG CHILDREN

A different method of examination is necessary for children who are unable to read, or rather who do not know their letters. To this class usually belong those attending kindergarten and the first and second grades. This method is also useful for children who do not know English, and for mentally deficient children. A chart employing the symbol E is used.[8] To examine

Fig. 7.—Children taught how to interpret the symbol E.

the young children satisfactorily it is best if the teacher in her classroom teaches her children the test in the spirit of play (figs. 6, 7 and 8). It usually works out

8. Brown, E. P., and Royer, J. R.: Should the Eyes of Little Children Be Tested? Pub. Health Nurse **19**: 259-262 (June) 1927; footnote 3, pp. 37-40.

best to refer to the test symbol E as a funny animal with legs which may turn over and over, sometimes pointing up, sometimes down, sometimes to the right, and sometimes to the left. With the very young children, considerable playing may be required.

The test may be worked out in a modified kindergarten play. It makes an ideal game for young children. A letter E, the letter being as large as the 200 foot

Fig. 8.—A child being instructed by teachers how to respond to the test.

letter at the top of the symbol chart, is used, until they learn to point exactly as the examiner desires. Next, they need to be accustomed to distance play to recognize the large symbols, smaller and smaller symbols gradually being used. It is better if the teacher teaches her class the test a few days before the medical examiner is to examine them, so that he may accurately and without loss of time take the vision. The vision may be taken in one of two ways: A single symbol on the chart is pointed to, and the child may answer by pointing the hand to show that he recognizes the direction of the legs, that is, the sides of the letter E; or the child may be given the large symbol E, where the white part of the card has been cut out (fig. 9), and he places it in the same direction as the E pointed to on the chart appears. For these children the following standard is recommended: while standing on the 15 foot line they should be able to read the 20 foot line on the chart with the better eye, and the 30 foot line, or better, with the other eye.

All children who have strabismus are to be considered defective, no matter what their vision is. Children who, according to the teacher, find difficulty in reading at school, are unable to read the blackboard, are subject to sore eyes or complain of headache, should be referred to an ophthalmologist for a careful eye examination to see whether there is an error of refraction, whether the eyes need treatment, or to rule out the eyes as a factor in the child's complaints. With some children, a consultation with the principal or teacher may be of aid in helping one to decide whether the child should be considered as having defective vision.

EXAMINATION FOR TRACHOMA

In districts where trachoma is prevalent, the children should be examined for evidence of this disease. This examination should include the inspection of the cornea and the palpebral conjunctiva of both the upper and the lower eyelids. The examination of the cornea and the lower eyelids does not offer any difficulty. For the rapid and simple examination of the upper eyelids, a wooden applicator is applied to the upper eyelid, about the level of the upper margin of the tarsus. The lashes are grasped and, with the applicator as a lever, the eyelid is quickly everted and examined. This can be done very quickly and without any discomfort to the child (figs. 10 and 11). I had occasion to examine a school in which a case of trachoma was reported. It was a school in which the majority of the children were of well to do parents. Six hundred and seventeen children were examined in three mornings. These included children from the ages of 5 to 13. One child was excused from the examination, as she showed such fear that it was felt best to leave her alone. Another child had a brief fainting spell just previous to the examination, but by the time her turn came she offered no objections. Foreign bodies were found in the conjunctival sac of three children: in two, cilia were found, and the third child had a foreign body that looked like a particle of dirt. One child had marked follicular conjunctivitis; another, who had very marked follicular conjunctivitis, was referred for further examination.

Summary of Eye Examinations

	Number	Per Cent
Children examined	15,267	....
Children with defective vision	1,881	12.3
Children who had glasses that corrected the vision	627	4.1
Children who had glasses that did not correct the vision	415	2.7
Children who had glasses: total number	1,042	6.8
Children who had strabismus of varying degrees	369	2.4
Children who had miscellaneous eye defects, not including conjunctivitis and blepharitis	166	1.1

Fig. 9.—A child placing the card with the symbol E in the same direction as the letter E pointed to on the chart.

VISION OF SAN FRANCISCO SCHOOL CHILDREN

The accompanying table gives a summary of the vision of 15,267 children attending San Francisco schools whom I have examined in the last three years. The vision was taken under various conditions of illumination and arrangement of space.

The number of children found with defective vision was 1,881, or 12.3 per cent. This included children who had glasses which did not correct the vision. The

number of children who had glasses that corrected the vision was 627, or 4.1 per cent, while 415 children, or 2.7 per cent, had glasses which did not correct the vision. The total number of children who had glasses was 1,042, or 6.8 per cent. There were 369 cases of strabismus of varying degrees, or 2.4 per cent. Miscellaneous eye defects, which did not include conjunctivitis or blepharitis, numbered 166, or 1.1 per cent.

Fig. 10.—Examination of the upper eyelid for trachoma. A wooden applicator is applied to the upper eyelid, about the level of the upper margin of the tarsus, and the lashes are grasped.

The 12 per cent of defective vision found in the school children of San Francisco agrees with the average for 4,711,021 examined in the United States in 1922-1923.[3] The report for 1927 of school children examined in London[9] showed that, among 1,823,775 children, 252,091, or 14 per cent, had eye defects.

WHEN CHILDREN'S EYES SHOULD BE EXAMINED

A question often asked is, When should a child's eyes be examined? The ideal thing would be for an ophthalmologist to examine the eyes before the child enters school. The next best thing is to have the child examined by the medical school inspector as soon as he enters school and becomes accustomed to his new surroundings. He should be examined before leaving the elementary school and entering junior high school, and once between these two examinations. This would make three examinations while the child is in the elementary school. Of course, children who have marked defective vision should be examined once a year. The child spends three years at the junior high school; there he should be examined in his first and last year. In the senior high school the child remains three or four years. He should be examined there in his first and third or fourth years. It is unfortunate that routine physical examinations are done in very few high schools.

SIGHT-SAVING CLASSES

Children whose sight is such that it does not permit them to work in the regular grades, or who attempt it only at the expense of their already limited sight, should be referred to the special sight-saving classes.[10]

According to the National Society for the Prevention of Blindness,[11] for all practical purposes children having less than 20/200 vision by Snellen chart measurement are considered educationally blind and are usually eligible for schools or classes established for the education of blind children. Between this group and the group that may be profitably educated in the regular grades are children with eye troubles of four types, which make education in the regular school classes impracticable or impossible:

1. Children having more than 20/200 vision but not possessed of sufficient visual acuity to enable them to read ordinary print or to see figures or letters on the blackboard.
2. Children who may be able to read ordinary type but only at the expense of their vision or general health.
3. Children with progressive eye troubles.
4. Children with diseases of the eye that seriously affect vision.

The medical school inspectors should be on the lookout for such children and have them referred to the special sight-saving classes.

COMMENT

The examination of the eyes of school children cannot be overemphasized. As Newmayer[4] has stated:

> The medical inspector should be most careful in his inspection of the eyes of children, as no other defect has a more important bearing on their education. Failure to recognize defective vision or some disease of the eye may mean failure to aid a subnormal or mentally defective pupil. No physical defect is of more importance with regard to the development of the child and the progress of its education than defective vision. It is one of the most frequent major defects noted in inspections of school children.

A defect of the eyes that remains uncorrected may mold a child's character and affect his whole future

Fig. 11.—With the lashes being held and the applicator used as a lever, the eyelid is quickly everted and examined.

life, as it may do to an adult. According to Shastid,[12] Lincoln's depression was due to an eye defect:

> Lincoln had been the victim of hyperphoria with, now and then, a momentary hypertropia. Such a condition, as all oculists know, gives rise to an intense form of eye-strain and is

9. The School Child's Health, London Letter, J. A. M. A. **92**: 661 (Feb. 23) 1929.
10. Rodin, F. H.: Sight-Saving Classes in California, California & West. Med. **30**: 251-255 (April) 1929. Bartels, M.: Which Children Should Attend Sight-Saving Classes? Am. J. Ophth. **12**: 387-392 (May) 1929.
11. Hadley, H., and Hathaway, W.: Sight-Saving Classes, New York, National Society for the Prevention of Blindness, 1927, pp. 6-7.
12. Shastid, T. H.: My Father Knew Lincoln, Nation **128**: 227 (Feb. 20) 1929.

one of the commonest causes of deep and protracted melancholy—the chronic, inexpressible blues. Here, then, was the probable explanation of the well known Lincolnian depression of spirits which lasted, off and on, until his death.

Ophthalmologists to whom school children are referred for examination should not hesitate to prescribe glasses for them if they are indicated, for with the correction of any eye defect not only will the child be helped with his studies but less will be heard about the harmful effect of the schools on the eyesight of children. To the criticism that using the eyes for reading and writing causes the children to need glasses, I will quote Terman,[13] who in his study of child geniuses found that 20 per cent of gifted children had subnormal vision and 11 per cent of them had glasses, while 16 per cent of other children had subnormal vision and 5 per cent of them wore glasses. Terman came to the following conclusion:

> About a quarter more cases of subnormal vision are reported for the gifted than for the control. This may be due to the fact that the gifted use their eyes more for reading, writing and other near work. A more probable explanation is that with a given degree of defect the gifted, because of the greater intelligence of their parents, are more likely than other children to have their vision corrected by glasses.

SUMMARY

1. There is a marked discrepancy in the percentages of defective vision found in the examination of school children by various observers. There is no definite standard of what to consider defective vision in children examined in the schools.

2. The examination of the eyes is often done under unfavorable surroundings and by unqualified persons.

3. The nurse's room should be so arranged that vision can be taken under uniform conditions.

4. The following standard is recommended: Children attending kindergarten and the first five grades, while standing on the 15 foot line, should be able to read the 20 foot line on the chart with the better eye, and the 30 foot line, or better, with the other eye. Vision below that is to be considered defective. For children of the upper grades this standard is suggested: While standing at the 18 foot line they should be able to read the 20 foot line on the chart with the better eye, and the 30 foot line, or better, with the second eye.

5. In testing the vision of 15,267 children in San Francisco, I found that 12 per cent had eye defects.

6. Children with marked defective vision should be referred to the special sight-saving classes.

7. The eye examination should be done by the medical school inspector along with the routine physical inspection.

8. The importance of the routine eye examination in the schools cannot be overemphasized.

490 Post Street.

ABSTRACT OF DISCUSSION

DR. B. FRANKLIN ROYER, New York: It would seem possible in the average American city with mixed nationalities that somewhere between 15 and 20 per cent of the school children have enough refractive error to justify sending them to an ophthalmologist for careful study, and experience would indicate that more than 12 per cent of school children may wear glasses to advantage. It is the school medical inspector's job to find all defects of the eye that are likely to cause deterioration of vision or lead to other physical harm; and, on the other hand, to discover vision defects that are likely to retard school progress as judged from the school's point of view.

It is obviously the duty of the school authorities, health authorities, or whoever shall attend to this health work in public schools, to conduct an annual physical examination, of which testing vision shall be a part, and it is the duty of the school examiner to interpret the observations as related to the various sense organs and to the organism as a whole to the parents in terms that they will understand. Next, it is up to the nurse, teacher or other person who carries on to convince the family of the necessity of correction. The follow-up worker must have enough knowledge of the relationship of the special sense organs to the organism as a whole to convince parents of the necessity for the corrective procedure recommended and to render such aid as may be deemed advisable in getting the correction accomplished, and to check up, either alone or through the teacher, to see that the child secures corrective treatment, and to see that glasses and frames, if ordered, are kept properly adjusted and properly cleansed.

When the acuity of vision in either eye is less than 20/30, in all higher grades, this should be considered sufficient deviation from the normal acuity of vision to justify reporting any school child to the family physician and through him to the ophthalmologist. It is the custom to route the child similarly for evaluation of possible eye error in every instance in which symptoms of asthenopia are found. The failure to seek from the teacher a history of symptoms or habits indicating eye strain is one of our greatest sins of omission in school health work.

If we ever reach the stage in school work when the person doing the physical examination may become so skilful in the use of the retinoscope in a dark room as to be able to work as a routine with the shadow test, a method of rapidly finding those children with a high degree of hyperopia who are missed in the present acuity of vision tests until marked symptoms of asthenopia are noted will be available. Then, and not until then, shall we be likely to have practical and rapid methods available that may be adopted in everyday school work for catching those we now miss.

DR. PERRY B. HOUGH, New York: For a number of years I had charge of a school clinic in New York, and the organization of a number of sight conservation classes. In New York, at the present time, they have what they call Health Day once a year, when examinations are made by the school teachers. They test the vision of the children, and look for any unusual condition in the eyes, ears, nose and throat. Then they are referred to the school nurse and the medical inspector, who check up the conditions, and if they agree in their observations the children are referred to the different clinics or physicians for examination.

The thing that has been impressed on us is the importance of this work in the case of backward and ungraded children. We examined several classes of ungraded children and in a large majority of cases we found eye defects. Glasses were provided, and in those cases a very marked improvement immediately took place in the work of the children. I remember one instance of particular interest, a child that was put in the ungraded class and then was sent to the blind class. One of the nurses took an interest in this child, and asked me whether I could do anything for him. I found a congenital cataract in both eyes. I operated on one eye and he went back to school and in the first term passed two grades. He was complaining of headache, and after some time the nurse asked me to operate on the other eye, which I did. Last year this boy had completed his grammar school and high school courses and had passed his entrance examinations for the City College of New York, showing how much can often be done for these patients who would be a complete loss otherwise.

As Dr. Boyer said, a great many children are passed over who really need glasses, who are hyperopic or who have a low degree of astigmatism, and yet read normally. I believe more good would be done if other things were taken into consideration, as a history of overwork or of headaches, by relieving them of nerve strain, than in the patients with low myopia who are suffering no symptoms except a slight diminution of vision for distance.

13. Terman, L. M.: Genetic Studies of Genius, Stanford University, Calif., Stanford University Press **1**: 198, 1925.

DR. EDWARD JACKSON, Denver: Within the last year or so, under the direction of the Society for the Prevention of Blindness, a piece of work has been done by Miss Brown and Mrs. Royer, who demonstrated that the vision of small children can be taken with accuracy, and for large numbers of children in the preschool age.

Mrs. Royer and Miss Brown in making their tests have turned the Snellen E in different directions. I saw this demonstrated in Denver. Mrs. Royer looked over the children, and selected those who seemed intelligent and started with them. Very quickly she had them pointing their fingers whichever way the E was turned. She started out with a large enough figure so that those who saw poorly, as well as those who saw well, got the idea of what the test would be. After testing five or six children, she called out two little Italian children who did not know a word of English; they had not understood any of the explanation of what they were to do, but had watched these other children respond to the test, and they responded just as satisfactorily as the other children. With such tests in our hands a good deal of the difficulty of school examinations is removed; a great deal of the lack of correspondence between examinations in different places is removed.

I differ a little with Dr. Royer about the importance of a fixed distance. It is more important to have a fixed illumination and then to have the test placed on a certain wall. This test was used in Denver for candidates for the air service during the war, and was very satisfactory. Those candidates who were supposed to have good vision were started at 7 meters and were walked until they could tell which way it was turned. That could be done with children. There is no magic about it that so many twentieths should be used in every record of vision. There is this advantage in twentieths, that if one goes over a large number of records, they are readily reducible to decimal fractions. When one looks at records from test types that show 22/96 or 13/72—there are such on the market—one will see an immense advantage in 20/20, and it is just as much an advantage to have 10/10.

Another point I want to make is about laying off the distance on the floor. It is not necessary to lay off in 3 foot distances; it can be laid off in 1 meter distances. The child should be started 5 meters away and walked forward until it recognizes the direction of the figure. A few corrections of the tests will make them more applicable by teachers and school nurses.

DR. WILLIAM H. CRISP, Denver: Dr. Rodin's first slide showed the illumination of the chart in testing school children, and I should like to make the point that if small letters are at the bottom of the chart and the illumination is from the top, the record will not be quite reliable. In accepting a lower standard for one eye than for the other, we must remember that in many cases, although the amount of vision may be satisfactory for near work, the two eyes may be distinctly unequal in refraction and there may be a marked element of eye strain that should not be overlooked in these cases.

Another point concerns having all the children except one backing toward the test card and one child looking at the card. In my experience it does not take the average child very long to memorize the letters, even though he is not looking at them, and in the arrangement illustrated the child will become familiar with the letters by listening to them. Reference was made by Dr. Royer to the fact that teachers often mention that a child seems to be suffering from eye strain. However, we cannot always rely on the teacher going that far, and, on the other hand, we cannot always have even an expert general physician to make the examinations. In many school districts we have to rely on the school teacher making the tests of visual acuity. It has often seemed to me very highly desirable that a small outfit of convex lenses should be given to such school teachers to uncover hyperopia. The school teacher could place the trial frame in front of any doubtful eyes, put a plus lens in, make the visual acuity test and form a conclusion as to whether the child saw as well through the convex lens as without it. If the child showed good vision through a fairly strong convex lens, then it would be obvious that the child was hyperopic and any related symptoms would receive attention by investigation of the hyperopia.

DR. FRANK H. RODIN, San Francisco: I agree with Dr. Hough that no child should be sent to the uncredited class without a physical examination, especially of the eyes and the hearing. I had occasion to examine a number of uncredited classes and had the same experience as Dr. Hough. I found very often that the only thing that was wrong with the child in the uncredited class was that he could not see well or hear well, and instead of being in an uncredited class the child should be attending either a sight saving class or a class for deafened children.

Answering Dr. Crisp, my whole aim was to devise a simple method whereby as many children as possible could be examined every year in the schools. We must remember that there are about twenty-five million children attending schools, and it is difficult to get the boards of education to employ enough medical school inspectors to examine the eyes and the other parts of the body as carefully as we should like. The method I have outlined permits of a rapid and accurate taking of the vision at the schools.

About illuminating the lower line, the bracket on the wall is adjustable, and it can be raised or lowered if the examiner wishes to illuminate any particular line.

Clinical Notes, Suggestions and New Instruments

CICATRICIAL STRICTURE OF THE STOMACH WITHOUT INVOLVEMENT OF THE ESOPHAGUS FOLLOWING THE INGESTION OF FORMALDEHYDE *

PORTER P. VINSON, M.D., AND STUART W. HARRINGTON, M.D.,
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Cicatricial stricture of the esophagus frequently follows the swallowing of caustics but unless the substance is taken in large amounts, as in attempts at suicide, the stomach is rarely burned sufficiently to produce extensive scarring with the formation of a gastric stricture.

In a case previously reported,[1] the esophagus and stomach were burned severely by the ingestion of a solution of lye, and pyloric stenosis followed. The solution was taken with suicidal intent.

The case reported here is unusual in that extensive scarring of the stomach without involvement of the esophagus followed the ingestion of a solution of formaldehyde.

Fig. 1.—Partial stricture of the antrum of the stomach. (Courtesy of Dr. R. B. Deane.)

REPORT OF CASE

A man, aged 59, examined Dec. 11, 1928, had accidentally swallowed a solution of formaldehyde in October. The strength of the solution was not known. Immediately following the accident he had had epigastric pain for two or three hours. Milk, water and mustard were administered. He vomited a small amount of blood. For about ten days following the accident, he was able to eat soft food; then it became increasingly difficult to get any food into the stomach. For four days before reaching the clinic, he had been unable to retain liquids and he had expectorated mucus frequently.

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* From the Division of Medicine and the Division of Surgery, the Mayo Clinic.

1. Vinson, P. P., and Hartman, H. R.: Pyloric Obstruction Due to Swallowing a Solution of Concentrated Lye, M. Clin. North America 8: 1037-1040 (Jan.) 1925.

Although the patient's physician at home had made a diagnosis of a double stricture of the stomach (fig. 1), it was assumed that there was also a cicatricial esophageal stricture and the patient swallowed a silk thread to be used as a guide for the passage of dilating olives. The passage of sounds did not disclose evidence of stricture in the esophagus, but a firm obstruction was located 5 cm. below the cardia (45 cm. from the incisor teeth) and a number 24 French olive was passed through the stricture with difficulty. After this the patient was able to take fluids freely and roentgen examination revealed one stricture situated in the stomach below the cardia and one in the antrum of the stomach (fig. 2).

Fig. 2.—Stricture below the cardia and a second obstruction in the middle of the stomach.

At operation, December 22, the stomach was found to be extensively scarred and indurated from the cardia along the lesser curvature, with a dense stricture just below the cardia and almost complete stenosis of the stomach 7.5 cm. from the pyloric ring. A small portion of the stomach along the lesser curvature appeared normal, the capacity being about 180 cc. (fig. 3).

It was difficult to expose this portion of the stomach, but it was possible to perform posterior gastro-enterostomy without clamps.

A Witzel type of anterior gastrostomy was then done and the thread that had been swallowed by the patient was drawn outside the opening and was used subsequently for directing dilators through the stricture below the cardia.

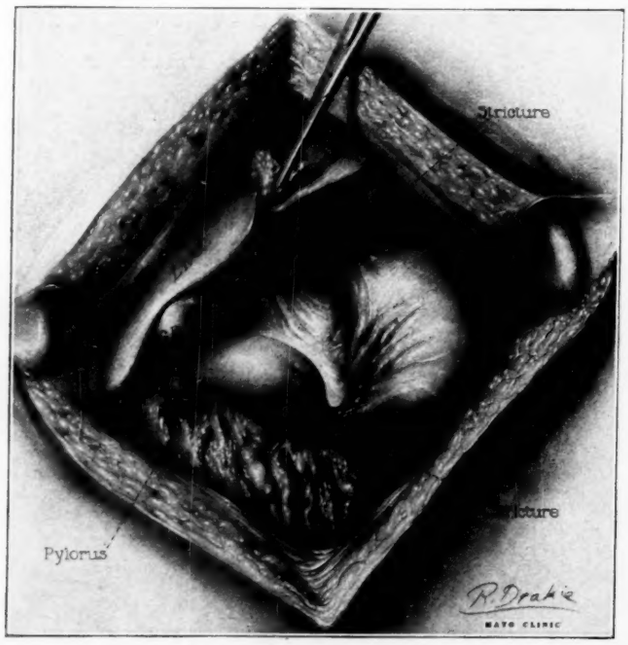

Fig. 3.—Strictures of the stomach found at operation.

After two months' treatment, during which time the stricture was dilated to 35 French, the patient was able to swallow any type of food and was permitted to return home. Further dilations will be necessary to maintain and enlarge the lumen of the stricture.

EPIDERMOLYSIS BULLOSA: REPORT OF A CASE WITH LESION PRESENT AT BIRTH

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Epidermolysis bullosa is described by Schamberg[1] as a rare disease, characterized by the rapid formation of blebs of various sizes following the slightest physical violence. The condition usually develops in infancy or early childhood and persists until late in life. In most cases there is a distinct history of heredity, in some instances the tendency being transmitted through several generations. The blebs are formed rapidly following slight traumatism and vary in size from a pea to a silver dollar. They are irregular in shape and are often of a claret color as a result of hemorrhage into the fluid contents. The disappearance of the bleb is frequently followed by a certain degree of atrophy of the skin.

The areas attacked, Schamberg notes, are those most subject to injury, such as the hands, feet, elbows, knees and anterior surfaces of the legs. The finger-nails are often permanently lost as a result of involvement of the matrices of the nails. The skin of the fingers is, at times, furrowed and atrophic.

Guy,[2] in 1927, reported the cases of three brothers without a family history of the disease, in all of whom the lesions began at or soon after 1 year of age. All presented dyspituitary symptoms and this author argues in favor of an endocrine background. The oldest patient improved after puberty. The views

Appearance of feet three days after birth.

of various authors as to etiology are reviewed; these include acantholysis, or a condition due to a lack of cohesion between the epidermis and the papillary layer of the dermis; an endocrinous origin; elimination of products of faulty metabolism; hereditary or congenital lack of resistance with poor trophic innervation; increased irritability of the afferent nerves with vasodilatation; congenital lack in the tone of the arterioles; angioneurosis with increased permeability of the vessels; congenital lack of development of the cutaneous vessels, and congenital lack of elastic tissue.

These cases showed histologically, by cutaneous punch, no abnormality in the unaffected skin. The nonbullous inflammatory areas showed normal elastic tissue except for fragmentation in the papillary layer. There was a tendency toward separation of the parakeratotic corneous layers. A moderate acanthosis was present with parenchymatous and interstitial edema in the rete. The entire corium, particularly the pars papillaris, presented a moderate perivascular lymphocytic infiltration. The vessels were dilated with swollen endothelium, and the collagen was swollen and edematous. The bullous areas showed the same general pathologic picture, the roof of the bullae consisting of the corneous layer, and the floor of the rete.

Little[3] states that epidermolysis bullosa shows an hereditary behavior characteristic of a mendelian dominant affecting the two sexes about equally.

1. Schamberg, J. F.: Diseases of the Skin and the Eruptive Fevers, Philadelphia, W. B. Saunders Company, p. 96.
2. Guy, W. H.: Epidermolysis Bullosa, Arch. Dermat. & Syph. **15**: 30 (Jan.) 1927.
3. Little, C. C., in Abt's Pediatrics, Philadelphia, W. B. Saunders Company **1**: 235.

Weber [4] reports the family history of an English boy with the disease, in which fourteen cases occurred in four generations. Six of these were females and four males. The sex was unknown in four cases. Greene,[5] in three illustrative cases, traced the family history to three generations. He noted the occurrence of two types of the disease; one, with blebs containing clear fluid, which heal rapidly without scarring; the blebs in the other type contain blood-stained fluid and heal with scarring and permanent disfiguration. This type shows varying degrees of nail dystrophy.

Calhoun and Brown [6] reported the case of a colored girl, aged 11, with a negative family history. In this case four bullae were noted at a few months of age. Bourne [7] reported the case of a Jewish girl, aged 13, in whom bullae were noted before the age of 2 weeks. Various other cases have been reported.

The present case (referred by Dr. John Rock) is of interest in that lesions were present at birth, having developed within the uterus or perhaps as a result of the normal pressure of passage through the birth canal.

REPORT OF CASE

H. W., a girl, born Oct. 22, 1928, by normal delivery, at birth weighed 7 pounds 10 ounces (3,794 Gm.).

The father and mother and one older sister, aged 1½ years, were living and well. There was no history of bullous eruption in the family. The Wassermann reactions were negative in both parents.

At birth an area on the left foot, largely on the anterior surface but extending onto the ankle and including the heel, was noted to be entirely denuded of skin. A similar but smaller area appeared on the outer and plantar aspect of the right foot shortly after birth. The second lesion measured about 1 by 2 inches (2.5 by 5 cm.). Two similar but smaller lesions soon appeared on the left hand and elbow. The skin elsewhere was apparently normal and the general physical examination was negative except that the nails of the thumbs were blue black.

October 24, the patient was seen by Dr. E. Lawrence Oliver, who made the diagnosis of epidermolysis bullosa.

October 27, the child weighed 7 pounds 2½ ounces (3,500 Gm.) and was nursing well. There were scattered, small abrasive areas noted on the chin and legs. The lesion on the left foot was the same. The lesion on the right foot was dry and apparently beginning to close in. An area on the upper gum, on the outer and occlusal surfaces, was denuded of mucous membrane and covered with a grayish yellow exudate.

October 29, the weight was 7 pounds 5 ounces (3,638 Gm.). The right foot was dry and healed in. The left foot was raw and exuding serum. There was a small raw area on the left shoulder about 1 cm. in diameter. Three blebs on the right palm appeared, 0.5 cm. in diameter. The lesion in the mouth was improving.

November 1, a roentgen examination was negative for thymus. Treatment of the lesions with 2.5 per cent tannic acid was begun.

November 12, the weight was 7 pounds 15 ounces (3,950 Gm.). The area on the left foot was well tanned and dry.

November 23, a new area the size of a quarter (25 mm.) appeared on the inside of the right foot. This had tanned nicely with tannic acid.

November 28, facial eczema appeared, and the sole of the left foot exuded serum.

December 5, the eczema was the same, but the left foot had healed in.

December 16, a bulla on the left foot appeared in the area of new skin; it was the size of a five cent piece (about 20 mm. in diameter).

December 25, three small bullae appeared on the dorsum of the left foot. They were treated with scarlet red ointment.

Feb. 1, 1929, the weight was 11 pounds 8½ ounces (5,738 Gm.). There was a small denuded area on the dorsum of the left foot.

March 18, the eczema was much worse on the face, arms and legs.

June 20, the weight was 17 pounds 3 ounces (8,552 Gm.). The eczema was worse on the extensor surfaces of the arms and legs and exuded serum. There was another bleb on the left foot, although the patient had been comparatively free from them since March 18. The skin of the left foot was thin and contracted, and the foot was definitely shorter than the right one. The nails of the fingers and toes were atrophic and brownish yellow.

COMMENT

The unusual point in this case is the extraordinary size and severity of the initial lesion that was present at birth. Subsequently the condition followed rather a mild course. A tannic acid solution, as it is used for burns, seemed to promote healing of the larger lesions.

264 Beacon Street.

4. Weber, F. P.: Brit. J. Dermat. **40**: 295 (July) 1928.
5. Greene, R.: Proc. Roy. Soc. Med. (Sect. Dis. Child.) **21**: 89 (Aug.) 1928.
6. Calhoun, T. J., and Brown, W. P.: Epidermolysis Bullosa, Arch. Dermat. & Syph. **11**: 183 (Feb.) 1925.
7. Bourne, C. R.: Canad. M. A. J. **15**: 404 (April) 1925.

ALOPECIA AREATA, WITH PARTICULAR REFERENCE TO ETIOLOGY

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History.—C. H., a man, aged 37, married, with three children living and one stillborn, consulted me, Oct. 23, 1928, regarding two bald spots on his head, shown in the accompanying illustrations.

He stated that the spots had appeared suddenly a month before, after the birth of his last child. After the diagnosis

Fig. 1.—Alopecia apparently due to an anxiety neurosis.

Fig. 2.—Another area of alopecia.

was made, he was assured that the hair would return in about a year. Further questioning revealed that thirteen years before, immediately following the birth of his first child, the same phenomenon took place. The involvement was greater, however, as it covered the entire left parietal region. Eight years before, at the birth of the second child, alopecia again appeared. One year before there was a stillborn child, and no evidence of alopecia.

The recent attack was the third, each having followed the birth of a living child. Previous attacks had cleared up within a year.

There was no family history of alopecia, either in the progenitors or in the patient's descendants. The patient was not of a nervous type and had no financial or domestic worries.

Examination.—Neurologic examination was negative. The blood and spinal fluid were normal. Examination for fungi was negative.

SUMMARY

As each attack came on after the birth of a living child, the only possible explanation is a latent anxiety neurosis at the time of delivery. The cause may be worry over the added expense of bringing up another child.

This theory is supported by the fact that the patient did not have an attack of alopecia after the birth of the stillborn child.

The peculiar circumstances of this case certainly place it definitely outside an hereditary, syphilitic or parasitic origin.

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SATURDAY, SEPTEMBER 21, 1929

TRAUMA, TUMOR AND COMPENSATION

Observations of the influence of external violence on the origin and development of tumors began many decades ago with the realization that true neoplasms are not like the masses of granulomatous tissue caused by chronic inflammation. With the application of modern methods of research and experimentation to the problems of malignant growths, efforts have been made to learn more about the effect of violence. Until recently, these investigations have been largely restricted to the use experimentally of mild repeated injuries of the type generally referred to as chronic irritation.[1] With the expansion of manufacturing, the "mass movement" in industry, organization in the ranks of labor and the astounding development of workmen's compensation group insurance, interest in this special phase of the origin of tumors has rapidly spread from a small group of laboratory workers throughout the medical profession. Practitioners generally have been forced to recognize that this problem of relation between trauma and tumor actually exists and that its consideration is occasionally imperative in their routine work.

Demands of the public have helped, no doubt, to bring about the changes in our points of view. The theory that a tumor may arise where tissues have been damaged by mechanical force is useful to those seeking compensation, an urgent desire to explain the mysterious has ever been a human trait and it is but natural that an injury is recalled after a tumor has appeared. As a consequence, the nature of this association of physical violence and the growth of tumors is being threshed out at a rate continuously increasing in courts and arbitration boards where the claimant is required to produce evidence for a causal association. Awards are frequently granted when a strong probability of such an association is established. At an international congress largely devoted to accidents, industrial insurance and occupational diseases which met in Düsseldorf in 1912, Thiem[2] and Lubarsch[3] proposed certain conditions which they regarded as essential in order to conclude that injury has this causal relation. Since then the principles they advanced have been widely adopted and frequently cited and have become familiar to both physicians and jurists by employment in legal proceedings. Blumenthal,[4] who is at the Institute for Cancer Research in Berlin, was recently asked to review these postulates and make suggestions for their modification or revision in conformity with the results of modern investigations of the origin and growth of tumors. His report is supplemented by reviews of the subject from Schmieden of Frankfort and Teutschländer of Heidelberg.

In their summaries, no new formulas are suggested notwithstanding the great volume, since 1912, of published investigations of malignant tumors and the prolongation of life by improved methods of treatment. It is still recognized that injury is never solely responsible for the growth of tumors and that violence can only set up inflammation and repair which in their turn, by overstepping functional needs, may have as their final outcome an excess of tissue possessing characteristics of a tumor. The individual or familial "tissue disposition" for tumor growth is still as important as ever; also the influence of age on certain forms of neoplasms.

The chief modifications of the requirements of Thiem and Lubarsch are that alterations of the injured tissues, and especially necrosis, need not be as marked as was for a time thought essential, or the violence as severe. It is highly important, however, that complete restoration of the previously normal structure does not take place. Blumenthal and his colleagues also suggest that the interval between injury and recognition of the tumor may be much longer than the brevity previously regarded as indispensable. The conditions originally prescribed were too rigid, and in these more liberal views it is clear that experiences such as the tragic deaths from cancer among physicians and others exposed to x-rays probably have had great weight. In order to secure compensation for injury of a tumor already present, growth subsequent to trauma should be more rapid than before, both clinical and microscopic evidence of injury should be irrefutable and, for the latter, photomicrographs are of great value. It is recognized that benign neoplasms may become malignant from being bruised, and the example commonly mentioned is the highly malignant melanotic tumor arising from pigmented moles. Contusions of intra-abdominal proliferating papillary cysts may rupture

1. An appreciation of this trend of cancer research is given by Woglom, W. H.: Experimental Tar Cancer, Arch. Path. **2**: 708 (Nov.) 1926.

2. Thiem, K.: Geschwülste und Unfall mit besonderer Berücksichtigung des Krebsgewächs, Monatsschr. f. Unfallkunde und Versicherungsmed. **19**: 232, 1912.

3. Lubarsch, O.: Einfluss von Unfällen auf Entstehung und Verschlimmerung von Geschwülsten vom Standpunkte des Pathologen und des Unfallarztes (Referatthema), Ztschr. f. Medizinalbeamte **25**, Berichte über Versammlungen, p. 97, 1912.

4. Blumenthal, Ferdinand: Trauma und bösartige Geschwulstbildung, Med. Klin. **24**: 249, 1928.

them and cause huge intraperitoneal regional extensions; widely scattered numerous secondary growths in the mammary gland may follow a bruise there of a primary carcinoma; many surgeons believe that more rapid growth and local extension are provoked by excision from tumors of pieces for microscopic examination and diagnosis.

There is support for its traumatic origin when, following injury, a metastatic tumor develops in a location rarely the seat of metastasis, and this is equally true for injury of the primary growth or of the healthy place where the secondary tumor subsequently develops. Many objections have been made to these rules and to the frequency with which compensation is awarded through their application. For example, the World War is often mentioned as a huge unprecedented experiment and, as yet, without reports of many tumors from warfare injuries. Until scientific research and experimentation demonstrate their utter fallacy we may expect these maxims, with perhaps some minor alterations from time to time, to continue in force. At present they are, in brief, that a tumor may be said to develop from injury when it appears where violence is applied to healthy tissues or in the adjacent tissues to which the force is transmitted; that there should be no long interval of demonstrable complete restoration and healing; that the tumor should not become evident too soon after the injury; that changes of inflammation and proliferation evident clinically should bridge over the period between trauma and tumor; that the interval may be long or short depending on the character of the violence and the number of times it is applied; that trauma may provoke a more active growth in existing tumors, and, lastly, that it may also cause metastasis and determine the location of secondary growths.

HYPERINSULINISM AND DYSINSULINISM

Within the few years since the discovery of insulin and the development of our knowledge of its physiologic function and therapeutic uses, evidence of the effect of overdosage has likewise been accumulating. Experience has abundantly shown that the quantity of the pancreatic hormone in circulation must be carefully adjusted to the available carbohydrate for metabolism; otherwise the drafts made on the circulating dextrose will tend to lower its content in the blood to a level at which untoward symptoms manifest themselves. In man these may appear as hunger, sweating, loss of emotional control, faintness and lassitude—sometimes referred to as insulin shock. It is becoming apparent, however, from recent reports that a condition of hyperinsulinism of endogenous origin may also occasionally be encountered. Three cases [1] of persistent hypoglycemia of a severe type have been reported from the Mayo Clinic. In a recent issue of THE JOURNAL [2] a case of "dysinsulinism" of six years' duration was reviewed in detail. In the latter patient at the Toronto General Hospital a slow growing tumor of the islets of Langerhans was successfully removed by operation with apparent complete subsequent recovery and freedom from the characteristic attacks of coma and convulsions. In one of the Rochester patients, resection of part of the pancreas brought about apparent relief from the constant tendency to severe hypoglycemia.

The possibility of a disease entity that may be described as hyperinsulinism or dysinsulism was apparently first suggested by Seale Harris.[3] The existence of a lowered blood sugar content, which of itself would tend to explain the observed symptoms of malaise and collapse, is of course not sufficient to fix responsibility on a pancreatic factor. As Allan [1] has pointed out, although hypoglycemia can be recognized with great ease, determination of the exact cause is difficult. Theoretically, the primary factors responsible for the change in the blood sugar level may be either failure of the liver activities in liberating sugar or overfunction of the pancreas. The differential diagnosis of hypoglycemia due to hyperinsulinism and hypoglycemia due to selective hepatic insufficiency is a difficult clinical problem. The effects of epinephrine and of pituitary extract, both of which tend to increase the blood sugar under ordinary conditions, may not be effective in the absence of adequate hepatic performance.

These drugs do not affect the blood sugar of a dehepatized animal. Recently Rabinowitch [4] of Montreal referred to the marked hypoglycemia of a patient with almost complete suppression of hepatic function owing to idiopathic acute yellow atrophy of the liver. In hypoglycemia due to excessive production or liberation of insulin, on the other hand, it is usually possible to ameliorate the symptoms by the use of epinephrine, although sometimes such treatment is without effect, because of the overwhelming amount of insulin available. The obvious immediate treatment of hyperinsulinism is to provide carbohydrate in sufficient amounts to maintain the proper blood sugar level. Sometimes food and drugs have only transient effects. Under these conditions the propriety of instituting surgical measures may be considered. The clinical picture of tumor of the islands of the pancreas with overproduction of insulin is now an established disease entity.[5] Prolonged convulsions and coma attended by

1. Allan, F. N.: Hyperinsulinism: Report of Two Cases, Arch. Int. Med. **44**: 65 (July) 1929. Wilder, R. M.; Allan, F. N.; Power, U. H., and Robertson, H. E.: Carcinoma of the Islands of the Pancreas: Hyperinsulinism and Hypoglycemia, J. A. M. A. **89**: 348 (July 30) 1927.

2. Howland, Goldwin; Campbell, W. R.; Maltby, E. J., and Robinson, W. L.: Dysinsulinism: Convulsions and Coma Due to Islet Cell Tumor of the Pancreas, with Operation and Cure, J. A. M. A. **93**: 674 (Aug. 31) 1929.

3. Harris, Seale: Hyperinsulinism and Dysinsulinism, J. A. M. A. **83**: 729 (Sept. 6) 1924.

4. Rabinowitch, I. W.: Biochemical Findings in a Rare Case of Acute Yellow Atrophy of the Liver, J. Biol. Chem. **83**: 333 (Aug.) 1929.

5. Thalhimer, William; and Murphy, F. D.: Carcinoma of the Islands of the Pancreas, Hyperinsulinism and Hypoglycemia, J. A. M. A. **91**: 89 (July 14) 1928. Wilder, R. M.: Tumor der Langerhansschen Inseln mit Hyperinsulinismus, Verhandl. d. Deutsch. Gesellsch. f. inn. Med. **40**: 223, 1928.

hypoglycemia in man will henceforth awaken especial interest from the standpoints just discussed. With growing knowledge of its manifestations, dysinsulinism is likely to become more prominent in clinical medicine.

RELATION OF IODINE TO THE THYROID GLAND

Few chapters in the history of biochemical discovery are of greater practical as well as scientific interest to physicians than that which involves the relations of iodine to the thyroid gland. Shortly after the finding of the element in the thyroid, in 1895, Baumann and his co-workers in Freiburg attempted to isolate the "active principle" that contained the newly discovered component. By hydrolysis a potent substance containing as much as 9 per cent of iodine was separated and introduced into therapy under the designation of iodothyrin. Today this is recognized to be a mixture of compounds. More than twenty years later, Kendall succeeded in isolating a crystalline substance, thyroxin, containing 65 per cent of iodine and apparently possessing the characteristic therapeutic potencies of thyroid substance. Kendall originally believed that thyroxin was a derivative of the amino-acid tryptophan, containing the indole nucleus in partly oxidized form. It remained for Harington, in 1926, to demonstrate in a brilliant research that thyroxin is in reality a derivative of tyrosine, another amino-acid of protein origin.

There had long been reason to assume that thyroxin is in some way associated with the proteins of the thyroid tissue. Long before Kendall's pioneer work, iodine-bearing protein had been separated from fresh thyroid tissue. Preparations of thyroglobulin were found to yield as much as 1.7 per cent of iodine. The existence of iodine-containing amino-acid groups in nature has long been known. Diiodotyrosine is obtainable from Gorgonian corals and the keratinoid parts of ordinary sponges. How widely the compound is distributed throughout living structures remains to be learned.

It is not surprising, therefore, that Harington and Randall [1] have succeeded in separating considerable amounts of well defined diiodotyrosine from thyroid in quantities almost comparable with the yield of thyroxin from the same tissue. Thanks to this excellent chemical investigation there can no longer be doubt that both iodine derivatives exist in the thyroid tissue, though the characteristic metabolism-promoting effect is presumably associated with the thyroxin-yielding component. The suggestion has already been advanced by Harington and Barger [2] that thyroxin is derived from diiodotyrosine.

Closely following these observations, Foster [3] has announced the isolation of diiodotyrosine from partially purified thyroglobulin in yields sufficient to account for about 30 per cent of the total iodine, considerable thyroxin also being separated from the same protein. In view of the unlike physiologic action of the two iodine-yielding compounds thus firmly established as integral units of the thyroid protein, it will probably no longer be justifiable to "assay" thyroid for therapeutic purposes solely on the basis of its iodine content.

Current Comment

DESTRUCTION OF EPINEPHRINE IN THE BODY

Thirty-five years has elapsed since the discovery of the pressor action of extracts of the suprarenal glands by Schäfer and Oliver. Since that time many details of this remarkable activity have been elucidated. The potent principle, epinephrine, has been isolated and identified as a synthetically reproducible organic compound. Investigation of its pharmacology has resulted in a quite clear understanding of its mode of action. Therapeutic uses for epinephrine have been developed so that it has become an essential in the armamentarium of the practitioner. There have been also, however, some disillusionments during these years of research development. The early assumption that the secretion of the suprarenal capsules is an important factor in the maintenance of arterial pressure through the vasomotor function of more or less continuously discharged epinephrine has been abandoned with the demonstration that the suprarenal medulla, where the hormone is produced, probably is not essential to life.[4] Another anomaly has been the rather evanescent character of the action of epinephrine. Even when large doses are administered intravenously the action on blood pressure is of relatively short duration, often persisting for a few minutes at most. This well established observation has raised the question as to the fate of the potent principle. It can readily be demonstrated that the great bulk of injected epinephrine has actually disappeared from the circulation when the vasoconstriction has worn off. Where is the site of the removal or destruction of the hormone? There have been intimations that the liver, which is somehow held responsible for many inexplicable reactions in the body, and perhaps other viscera are primarily involved in the loss of the substance. Recent experiments by Markowitz and Mann [5] at the Mayo Foundation, involving observations on liverless and otherwise eviscerated animals, testify to the belief that the destruction of epinephrine is widespread. Although the

1. Harington, C. R., and Randall, S. S.: Observations on the Iodine Containing Compounds of the Thyroid Gland: Isolation of *dl* 3:5 Diiodotyrosine, Biochem. J. **23**: 373, 1929; J. Soc. Chem. Ind. **48**: 296, 1929.
2. Harington, C. R., and Barger, G.: Biochem. J. **21**: 169, 1927.
3. Foster, G. L.: The Isolation of 3:5 Diiodotyrosine from Thyroid, J. Biol. Chem. **82**: 345 (Aug.) 1929.
4. The Hormone of the Suprarenal Cortex, J. A. M. A. **91**: 1376 (Nov. 3) 1928; The Medulliadrenal Secretion, ibid. **90**: 1381 (April 28) 1928; The Cortical Hormone of the Suprarenals, ibid. **90**: 34 (Jan. 7) 1928; A Hormone of the Suprarenal Cortex, ibid. **89**: 1784 (Nov. 19) 1927; Suprarenal Function, ibid. **88**: 1560 (May 14) 1927.
5. Markowitz, J., and Mann, F. C.: The Rôle of the Liver and Other Abdominal Viscera in the Destruction of Epinephrine in the Body, Am. J. Physiol. **89**: 176 (June) 1929.

liver and intestine may play some part in the disappearance of epinephrine, this part is no greater than can be accounted for by the removal of as much of the vascular tree as is contained in these viscera. Excision of the latter, at any rate, does not strikingly prolong the pressor effects of the hormone. This is what Markowitz and Mann regard as logical. Since epinephrine acts on thoracic autonomic nerve endings all over the body, they remark, one would expect the most likely site for its destruction to be in these endings. This conclusion is in harmony with the belief of one of the early investigators of epinephrine, the English physiologist T. R. Elliott, that the potent principle disappears in the tissues which it excites. The destruction of epinephrine probably occurs all over the body.

TREATMENT IN CARCINOMA OF THE CERVIX

While one authority [1] has stated that "carcinoma of the cervix of the uterus is a field in which radium and roentgen-ray therapy are rapidly replacing surgery," many surgeons still assert that the Wertheim operation remains the procedure of choice. Among the latter is the well known British gynecologist Victor Bonney. He is, however, no extremist. Probably surgeons and radiologists as well will agree with his recent statement that "that which is beyond the scope of radium includes certain cases not beyond the scope of surgery, and that which is beyond the scope of surgery includes certain cases not beyond the scope of radium." [2] Under these circumstances the general practitioner who makes the diagnosis and must advise the patient regarding her next steps faces a heavy responsibility. The advice of a radiologist concerning the contraindications to radium treatment may prove of some assistance. Strachan [3] enumerates six contraindications to the application of radium. General emaciation and cachexia is a condition that is unfavorable to radium treatment; in such cases the method is liable to result in rapid deterioration and early death. When the red cell count is below 3,000,000 or the hemoglobin index below 40, radium should not be applied; radium treatment has a tendency to produce a degree of anemia, probably by a systemic action on the spleen, and this in the presence of a preexisting severe anemia may be dangerous. If hydronephrosis or pyonephrosis should be detected by the presence in either loin of a tender swelling, radium should not be applied, the resulting increased fibrosis in the broad ligaments will add to the obstruction. Rectovaginal and vesicovaginal fistulas are contraindications, as radium in such cases is apt to cause intense local irritation with sloughing. Radium should not be used in the presence of any inflammatory pelvic lesion; a foul sloughing condition of the growth is one of the most common and important of these; if radium is used before the inflammatory condition has been cleared up, the probable consequence is a massive necrosis with some toxemia and pelvic parametritis or peritonitis. In cases in which the whole pelvis is extensively infiltrated with extension from the cervical growth the use of radium even supplemented with high voltage roentgen therapy seems often to hasten rather than to delay the end. Finally, radium should be withheld in the presence of impaired metabolism, especially defective excretion of nitrogenous waste products. Dr. Strachan is careful to point out that some of these conditions may be overcome, and radium may then be used. One temporary contraindication which he does not mention, the condition of pregnancy, has been emphasized of late by other writers.[4] The risk of radium to the fetus is almost, but not quite, as great as the Wertheim operation. Even so it may at times be necessary to sacrifice the child's interest in order to treat the mother while there is still a fair prospect of saving her life. Early treatment remains in every case a matter of greater importance than the method adopted.

1. Wood, F. C.: Radium and Roentgen-Ray Therapy, J. A. M. A. **92**: 894 (March 16) 1929.
2. Bonney, Victor: The Results of Wertheim's Operation and a Comparison Between Them and Those Obtainable at Present by Radium, Proc. Roy. Soc. Med. (Sect. Obst. & Gynec.) **22**: 53 (July) 1929.
3. Strachan, G. I.: Contraindications to Irradiation in Carcinoma of the Cervix, Proc. Roy. Soc. Med. (Sect. Obst. & Gynec.) **22**: 50 (July) 1929.
4. Linton, J. R.; Marks, G. A., and Smith, G. V.: The Treatment of Nonmalignant Uterine Bleeding by Radium, J. A. M. A. **92**: 966 (March 23) 1929.

THE MENTAL ACTIVITY OF ALLERGIC CHILDREN

Chronic illness during childhood is peculiarly annoying to parents and physicians, as well as to the children involved, because it tends to interfere with growth and development at a time when these formative processes ordinarily are most active. The retardation of progress applies both to bodily changes and to the mental life of the child. Backwardness inevitably has certain embarrassments which apply not only to intellectual qualifications but also to the consequent social status of the adolescent. It is gratifying, therefore, to learn from the observations of Balyeat [5] in Oklahoma City that allergic children—those who are victims of hayfever or asthma or some allied condition such as eczema, urticaria or migraine—deserve to be ranked in a separate category of patients. A study that he has made of several hundred allergic children, in all of whom the hypersensitive condition was demonstrated by positive intradermal tests, showed that the patients were above the average in general health. According to Balyeat, they seem to exhibit a superior resistance to pathogenic organisms. Furthermore, an application of tests of mental activity indicated, for the Oklahoma children at least, that the "intelligence quotient" of the allergic children is considerably above the average normal of their nonallergic fellow students. The explanation of this statistical finding as to the superior aptness is by no means obvious; but it is interesting to note that those who exhibit it may cope with the problems of life with comparative ease, thus differing from patients that suffer from most other chronic disorders. Therefore, Balyeat remarks, if study and treatment in other chronic diseases are worth while, and they are, though in many cases the outlook may not always be bright, how much more is one justified in a careful study and treatment of allergic children.

5. Balyeat, R. M.: The General Health and Mental Activity of Allergic Children, Am. J. Dis. Child. **37**: 1193 (June) 1929.

Association News

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 11:15 in the morning, Chicago daylight saving time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of Sept. 23-28 is as follows:

September 23. "Testimonials," by Dr. Arthur J. Cramp.
September 24. "Diseases of Some Famous Historical Characters," by Dr. James O. Nall.
September 25. "The Practice of Medicine as an Opportunity for Service," by Dr. N. P. Colwell.
September 26. "Frontiers of Medicine," by Dr. R. G. Leland.
September 27. "Healthful Foods," by Dr. R. G. Leland.
September 28. "Personal Rights versus Public Safety in the Matter of Health," by Dr. John M. Dodson.

Evening Health Hints from Hygeia, 8 o'Clock, Chicago Daylight Saving Time

September 23. More Reminders for Motorists.
September 24. Museum Fatigue.
September 25. Exercise in Old Age.
September 26. African Natives Clamor for Vaccination.
September 27. High Blood Pressure May Cause Accidents.
September 28. Falls Cause Most Home Accidents.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal.—Dr. Clara Seippel Webster has resigned as dean and medical adviser of women at the University of Arizona. After spending the summer in Vienna and Berlin, she will return to Tucson.——Dr. Bryant B. Edwards has been succeeded as medical director of the Comstock Hospital, Tucson, by Dr. Stirley C. Davis. This is a charitable institution in which the board appoints a new medical director each year.

CALIFORNIA

School Provides Consultation Rooms.—The University of California Medical School this year is providing consultation rooms in connection with its clinic at Second and Parnassus avenues, San Francisco, so that students in the upper classes will have an opportunity to study patients from a broader point of view, taking into consideration those social and economic factors which may have some connection with the complaint. Thus the students will gain a better insight into medical practice.

New Thoracic Surgery Clinic.—Mr. and Mrs. George H. Roos, San Francisco, have made an additional gift of $5,000 to equip a clinic in connection with a study of thoracic surgery and cancer at the University of California Medical School, for which they recently gave $100,000. Lack of space for additional clinics at the medical school made it necessary to move the roentgen-ray laboratory and the faculty dining room to provide for this clinic. The laboratory work in this study will be done at the Hooper Foundation for Medical Research. Dean Langley Porter of the medical school said that the capacity of the school buildings and the hospital has been taxed to such an extent that it has been difficult to find space for new clinics. Plans for expansion of the hospital and the erection of new medical buildings have been ready for ten years, but funds have not been available. The purchase of equipment for the new thoracic clinic will be started at once.

California Swimming Pool Regulations.—Regulations for swimming pools, promulgated by the California State Department of Health, became effective August 1. They require that samples of water from pools shall at no time contain more than 1,000 total bacteria per cubic centimeter when plated on standard agar medium twenty-four hours at 37.5 C., and that *B. coli* shall not be present in more than 50 per cent of the 1 cc. samples examined when confirmed on Endo medium. Persons suspected of having infectious disease shall be excluded from pools except on presentation of a certificate from a physician on that day. There are regulations pertaining to the sanitary conditions of the premises and proper equipment in case of emergency. Applications to the board for permits to open swimming pools shall be accompanied by detailed plans of the pool. The board calls attention to some methods used in disinfecting pool waters. Whatever method is used should be guaranteed to maintain adequate disinfecting action when the pool is under heavy patronage. To get uniform results, the water must be recirculated through the pool, a pump with a capacity sufficient to handle the pool's contents in at least eight hours being used; the disinfectant should be added before the water is returned to the pool. Chlorine gas is said to be a more reliable disinfectant than hypochlorite solution. The amount of chlorine used varies with the number of people using the pool, the warmth of the water and the strength of the chlorine. If free chlorine is present in 0.2 part per million, the pool is in a disinfected state, and if there is less than 0.5 part per million, excess chlorine will not be present. About 1 pound of active chlorine each swimming day is needed for a 100,000 gallon pool not heavily patronized. This amount of chlorine, the chief of the bureau of sanitary engineering says, would be supplied by 5 pints of commercial hypochlorite solution, 2.5 gallons of household strength sodium hypochloride, or about four 12 ounce cans of chlorinated lime. A simple test for free chlorine is to use the indicator orthotolidine which, when added to a sample of water, gives a yellow color proportionate to the amount of chlorine present. Comparison is made with prepared color standards.

CONNECTICUT

Promoting Real Estate and the Public Health.—The $100,000 suit by the Harvey Realty Company, New Haven, against the municipality of Wallingford, illustrates how a real estate project may endanger a public water supply. In its decision the court stated that the realty company bought a piece of cheap, wild land on the outskirts of Wallingford and laid it out into lots which it advertised in a grossly exaggerated and misleading manner. There was a small mud hole on the premises, the court said, which the realty company made into a pond, and advertised bathing extensively. The little stream flowed into a reservoir which is part of the public water supply at Wallingford. The water company announced that it would prohibit bathing in the pond, and the state health commissioner posted notices prohibiting bathing. So the realty company brought suit claiming damages for interference with its rights. The municipality of Wallingford at the same time filed a claim for an injunction to prevent bathing in the stream. The court denied the company's claim for damages. The injunction was also denied because the things which it sought to enjoin, the court said, are clearly illegal and adequate enforcement was already provided by the statutes. The court pointed out that bathing in this pond would be a positive and serious menace to the public health.

GEORGIA

Personal.—Col. Percy L. Jones, U. S. Army Medical Corps, was guest of honor at a banquet in Atlanta, August 27, given by the medical officers of the Georgia National Guard, with which organization Colonel Jones had been on duty as instructor previous to his new assignment at Fort Leavenworth, Kansas.

Society News.—Dr. James E. Paullin, Jr., addressed the Fulton County Medical Society, September 19, on "Syphilitic Myocarditis," and Dr. Carl C. Aven presented a case of "Tuberculous Pneumonia with Recovery." Dr. Marion C. Pruitt addressed the society, September 5, on "Classification as to Treatment of Hemorrhoids."

ILLINOIS

Favorable Maternal Mortality Report.—The most favorable maternal mortality rate ever made in Illinois (5.1 per thousand confinements), the state health commissioner reports, was that of last year, when only one out of each 200 mothers died as the result of childbirth. Childbirth complications, even so, caused the deaths of 694 mothers in 1928, and 418 of them resulted from preventable causes. Puerperal septicemia was responsible for 237. The number of confinements in the state was 134,346, among which were 4,678 stillbirths. The maternal mortality rate in 1928 was 43 per cent below that for 1918.

At War with Our Surroundings.—In the last seven years, accidents killed more people in Illinois than were killed in

action in the army of the United States in the World War. The state health department says that only three diseases cause more deaths in Illinois than do accidents. Attention centers around automobile accidents but the fact is that the toll from all other accidents combined is more than double that for automobiles. Drowning cost Illinois last year 383 lives; burns, 302; explosion of firearms, 133, and falls, 961. Accidental deaths in Illinois in 1928 totaled 4,460 males and 1,490 females; they increased 24 per cent from 1922 to 1928.

Society News.—Dr. Clement L. Martin, Chicago, addressed the Marion County Medical Society, Salem, August 30, on "Treatment of Hemorrhoids by Nonsurgical and Operative Methods."——The Rock Island County Medical Society was addressed, September 15, by Dr. William L. Brown, Chicago, on "Therapeutic Principles Involved in the Use of Radium and the X-Ray."——Dr. Clifford G. Grulee, Chicago, addressed the Coles-Cumberland Medical Society, September 18, at Mattoon on "Essentials in the Care and Feeding of the New-Born."——The Madison County Medical Society was addressed at its annual banquet at Alton, September 6, by Dr. Amand N. Ravold, St. Louis, on "Origin of Gallstones."

Philadelphia Program at Quincy.—The Adams County Medical Society has arranged an all-day clinical meeting for October 14, the program of which will be presented by the following members of the faculty of the University of Pennsylvania School of Medicine and the Graduate School of Medicine, Philadelphia: Drs. Eldridge L. Eliason, professor of clinical surgery; Edmund B. Piper, professor of obstetrics; Gabriel Tucker, assistant professor of bronchoscopy and esophagoscopy; Isidor S. Ravdin, J. William White professor of surgical research; Walter Estell Lee, professor of surgery; Robert H. Ivy, professor of maxillofacial surgery; Basil R. Beltran, assistant professor of surgery; William Bates, assistant professor of surgery; Thomas Turner Thomas, associate professor of applied anatomy, and John A. McGlinn, associate professor of gynecology.

Chicago

Hospital News.—Loyola University has by affiliation assumed teaching control in St. Anne's Hospital, 4900 West Thomas Street, and St. Elizabeth's Hospital, 1433 North Claremont Avenue, the combined capacity of which is 500 beds; Loyola will also be responsible for the new Lewis Memorial Maternity Hospital, Thirtieth Street and Michigan Avenue, which will provide special work for students in obstetrics and pediatrics.

Personal.—Dr. William J. Hickson, for about sixteen years head of the psychopathic laboratory of the Municipal Court of Chicago, has resigned. Dr. Meyer Solomon, associate in neurology, Northwestern University Medical School, has been appointed acting director pending the selection of Dr. Hickson's successor.——Dr. Esmond R. Long, professor of pathology, University of Chicago, has been appointed editor in chief of the *Journal of Outdoor Life*, which is published by the National Tuberculosis Association.

Annual Safety Congress.—The National Safety Council will hold its annual safety congress at the Stevens Hotel, Chicago, September 30-October 4. The program of the education division and several cooperating organizations, Tuesday morning, includes, among others, addresses by Dr. Arnold H. Kegel, city health commissioner, on "Relationship of Defects in Children to Accidents," and Herman J. Norton, supervisor of health and physical education, Rochester, N. Y., public schools, "Minimum Essentials of a Safety Program." Tuesday evening, "A Pilgrimage to Safety" will be given by the Children's Civic Theater of Chicago under the direction of Miss Irene A. Skinner; Wednesday morning, J. C. Wright, director, Federal Board of Vocational Education, will speak on "Training Workers for Safety in Industry." The complete program of the congress embraces 135 meetings of sections, special groups and general sessions. All meetings are open to the public.

Society News.—Dr. Gladys R. H. Dick addressed the Henderson County (Ky.) Medical Society, recently, following a trip to Berea in connection with the recent immunization of students during an outbreak of scarlet fever.——Dr. Ione F. Beem has been made president of the Medical Women's Club of Chicago for the ensuing year, and Dr. Marian S. W. Bougher, president elect.——Dr. Samuel A. Levinson has been elected president of the Chicago Tuberculosis Society for the ensuing year.——There has been a steady increase in deaths from heart disease in Chicago since 1910. The rate for 1928 was 249.7 per hundred thousand of population.——The Chicago Council of Medical Women will be addressed, October 4, by Drs. Mary G. Schroeder and Yetta Scheftel on "Treatment of Psychoneurosis at the Riggs Foundation" and "Treatment of Borderline Mental Cases," respectively.——Prof. Joseph Barcroft of King's College, Cambridge, England, lectured at Northwestern University Medical School, September 11, on hemoglobin.

INDIANA

Leper Found in Gary.—The laboratories of the Indiana State Board of Health and the U. S. Public Health Service have confirmed the diagnosis of leprosy in the case of Atanazio Bailon, a Mexican, who has lived in Gary about a year. He is not a citizen of the United States. The case was first diagnosed by two local physicians. The patient has been isolated and steps are being taken to deport him to Mexico.

Quack Colvin Fined.—Mayor Burkhart of Seymour fined Harry A. Colvin, who claimed to be a resident of Columbus, Ind., $200 and costs, August 21, on charges of practicing medicine without a license. Colvin is reported to have pleaded guilty to a similar charge in Bloomington two months ago and was fined $25 and costs. His plan, it appears, was to call on the chronically ill in the country and sell them a remedy, charging sometimes $20.

Survey of Cost of Medical Care.—A part of the field work of the survey in Shelby County being made by the Committee on the Cost of Medical Care has been completed. Representatives of the committee interviewed physicians, dentists, druggists and other groups in the county. The work completed will be supplemented by a study of 325 families. Shelby is one of several counties in the United States that have been selected in which to make this study in addition to one large and one medium sized city.

Society News.—Dr. Albert E. Bulson, Jr., Fort Wayne, addressed the Northeastern Indiana Academy of Medicine, Angola, recently, on "Insidious Blindness."——Kiwanis is providing a $150,000 wing to the James Whitcomb Riley Memorial Hospital, Indianapolis, which will be dedicated early this fall.——The Grant County Medical Society invited the county bar association to the Country Club at Marion, August 28, to play golf and after dinner to hear Gus S. Condo on "Should Jury Trials Be Abolished in Civil Cases."——Dr. Heilman C. Wadsworth, Washington, was made president of the Second District Medical Society at Eagle Island, August 27, and Dr. John Stanley Brown, Carlisle, secretary.

Health Conference at Evansville.—The annual conference of city, county and town health officers of Indiana will be held at Evansville, September 24-25, preceding the annual meeting of the Indiana State Medical Association. Dr. William F. King, Indianapolis, secretary of the state board of health, will preside. Among the guest speakers will be Dr. Thomas Parran, Jr., of the venereal disease control division, U. S. Public Health Service, Washington, D. C.; A. M. Sydenstricker, New York, who will discuss "Vital Statistics," and L. F. Huddleston, East Lansing, Mich., "Undulant Fever." It is expected that about 250 Indiana health workers will attend.

MAINE

Licenses Revoked and Restored.—The state board of registration of medicine at the July meeting in Portland revoked the license of Dr. Charles K. Donnell, Lewiston, who had been found guilty of manslaughter following a criminal abortion and sentenced to prison (THE JOURNAL, August 10, p. 464). The board lifted the indefinite suspension of Dr. Israel E. Rudman, Bangor (THE JOURNAL, January 5, p. 62). The board's next regular examination for license will be held, November 12-13, at the city hall, Portland.

MARYLAND

Personal.—The portrait by Sargent "The Four Doctors," which has hung in the library of Johns Hopkins University for years, has been removed to the reception room of the William H. Welch Memorial Library, which will be dedicated October 17.——Dr. Edward Mapother, superintendent of the Maudsley Hospital, London, visited the state hospitals of Maryland last week on an inspection tour. He is to report to a committee in London which is studying the general reorganization of the care of the insane.——Dr. John C. Hemmeter, Baltimore, has been elected an honorary member of the Academy of Medicine of Paris.——Mr. Harry B. Broll has been appointed director of the division of chemistry of the Baltimore City Health Department, succeeding William H. Schultz, Ph.D., who was transferred to the division of chemical technology.

Anne Arundel County Awarded Trophy.—For the third time, the silver trophy awarded annually by the National Negro

Business League for the best county negro health campaign carried on in any rural community in the country has been awarded to a community in Maryland, Dr. Robert H. Riley, state health commissioner, announces. The health campaign for which Anne Arundel County was awarded the trophy for 1928 emphasized child health, prevention of tuberculosis, personal hygiene and community sanitation. Dr. Charles H. Halliday, deputy state health officer, directed the program. It included conferences for mothers and young children, physical examination of school children, vaccination against smallpox, chest clinics, dental clinics and public meetings. One day was devoted to health in the homes, another to community hygiene, another to school health, and a special effort was made to destroy breeding places of mosquitoes and flies. The trophy was awarded to Montgomery County the previous year. The city of Baltimore has also won the cup for a negro health campaign carried on in cities of more than 100,000 people.

Report of Baltimore Health Department. — The great objective of health work, the Baltimore city commissioner of health says, in his annual report, is the production of a health level that will enable people to work for a living if an opportunity is presented. His report is composed of individual reports of the heads of bureaus in the department and of tables of vital statistics. The typhoid morbidity rate for Baltimore for 1928 was the lowest on record. There were 114 cases of typhoid, and twenty cases of paratyphoid. Baltimore had only four cases of smallpox, the first to be reported since 1925. There were twenty-one cases of tetanus with nineteen deaths. Poliomyelitis markedly increased during 1928; among 127 cases there were eleven deaths. For the first time the quality of the city water was maintained within the limits of the standard set by the U. S. Treasury Department requirements. The bacterial records indicate that the water supply was the best in the history of the department. Four outbreaks of food poisoning were reported, two due to infected chicken salad prepared in private homes and not properly refrigerated. The public as a whole, the report says, appears to be ignorant of the underlying causes of food poisoning and should be informed of the dangers that may result from contamination of food by mere contact with the hands. The average bacterial count of standard prepasteurized milk entering Baltimore during 1928 was 379,000 per cubic centimeter, which was a decrease of about 40 per cent over the two preceding years. Much credit for this improvement is given to the cooperation of the farmers. However, about 10,000 gallons of milk was condemned during the year and nineteen farmers had their permits suspended for adulterating milk by adding water. Great improvement in the bacterial count of milk bottles used before adding milk is noted; the standard for milk bottles was reduced to a maximum of fifty bacteria per bottle, whereas in former years it had been 200 per bottle. The total crude death rate for Baltimore was 14.36 per thousand of population, and the birth rate was 17.94.

MISSOURI

Moving Pictures of Medical Golfers. — At the annual meeting of the St. Louis Doctors' Golf Club, September 27, moving pictures taken at the June meeting from the first tee in a contest for form and style will be shown. Seventy members played in June at the time these pictures were taken, and Drs. Irl R. Davis and Leith H. Slocumb tied with gross scores of 78. In the playoff Dr. Davis won the silver trophy. The judge in the contest was Joseph Henry, a professional. The evening was accompanied with much merriment afforded by the doctors' sextet, solo and communal singing and a delicious dinner. The September meeting promises to be equally successful, as the Normandie Golf Club, a "superbly sporty course," is now in ideal condition. The entire fee for the meeting is $5.

Society News.—Members of the Eugene Field Foundation for the Relief of Crippled Children gave a luncheon, July 28, for the twenty patients in the crippled children's department of the University of Missouri Hospital at Columbia. The governor of the state was present. The foundation is incorporated in Missouri for the purpose of receiving and disbursing funds for the treatment of crippled children and to receive and administer bequests for that purpose.——The president of the St. Louis County Medical Society, Dr. Arthur W. Westrup, Webster Groves, has been appointed superintendent of the $1,000,000 St. Louis County Hospital, which will be under construction this month. —— Radiophones have been placed at the beds and loud speakers in the recreation rooms at the U. S. Veterans' Hospital at Jefferson Barracks, St. Louis. —— The Jackson County Medical Society and the Kansas City Southwest Clinical Society, meeting jointly, were addressed, September 10, in the morning by Drs. Henry L. Bockus, Philadelphia, on "Syphilis Associated with Pathology in the Upper Gastro-Intestinal Tract," and Charles E. Ruth, president of the Polk County Medical Society, Des Moines, Iowa, on "Materials for the Treatment of Fractures and Their Application." In the evening Dr. Bockus spoke on "Duodenal Stasis" and Dr. Ruth on "Hip Fractures."——The Jackson County Medical Society was addressed, September 17, by Dr. Katharine B. Richardson, Kansas City, on "Correction of Speech Defects in Children," and by Dr. Jess Vardiman Bell.——The St. Louis Medical Society was addressed, September 17, by Drs. Lawrence Schlenker on "A New and Essential Point in Blocking the Internal Laryngeal Nerve"; James Lewald, "Clinical Types in the Feebleminded," and William L. Nelson, "Changing the Behavior of the Maladjusted Child."

NEVADA

State Medical Meeting at Elko, September 27-28.—The twenty-sixth annual meeting of the Nevada State Medical Association will be held at Elko, September 27-28, under the presidency of Dr. Robert R. Craig, Tonopah. The scientific program comprises addresses by Dr. Miley B. Wesson, San Francisco, on "Diseases of the Prostate and Their Treatment"; Chauncey D. Leake, Ph.D., San Francisco, "Recent Advances in Pharmacology"; Drs. Thomas Bath, Reno, "Endocervicitis, Etiology, Pathology and Treatment"; Bertram C. N. O'Reilly, San Francisco, "Differentiation of Yaws and Syphilis"; Howard R. Hartman, Rochester, Minn., "Medical Treatment of Ulcer of Stomach and Duodenum"; John H. Woolsey, San Francisco, "Aspects of Duodenal and Gastric Ulcer"; Fred R. Fairchild, Woodland, Calif., discussion of complications following surgical treatment of peptic ulcer; Robert C. Coffey, Portland, Ore., cancer and its treatment, and Albert Soiland, "Carcinoma of the Breast."

NEW YORK

Society News. — The Medical Society of the County of Queens and the Queensboro Tuberculosis and Health Association will meet jointly at the Oakland Golf Club, Bayside, Long Island, September 24. Dr. Harry A. Bray will speak on "Essentials in Diagnosis and Treatment of Pulmonary Tuberculosis."

New York City

Physical Examination Required of New Pupils.—The school and health authorities have decided that children entering school for the first time should present a certificate from a licensed physician setting forth the results of a physical examination. This record will be checked and supplemented by subsequent inspections by a force of 105 physicians working under the health department, who have been given special courses to qualify them. They will work in teams of three, instead of alone as heretofore. The *New York Medical Week*, which considers this one of the most ambitious programs formulated for the preservation of child health, expresses the hope that the health commissioner will continue the policy he adopted in the diphtheria campaign, and that only where poverty exists at home will the children be referred to dispensaries to take advantage of the free service.

Report on Outpatient Clinics.—The associated outpatient clinics committee, which has submitted a report to the New York Tuberculosis and Health Association, recommends that the tendency toward overspecialization in clinics be discouraged without diminishing the efficiency gained through the concentrated attention of physicians on certain types of work. In the distribution of outpatients at the admission desk, the committee says that patients who obviously belong to the nonmedical specialties can be assigned directly to them at once, but that does not preclude the possibility of the patient requiring attention from the medical clinic also, and in such instances he should be referred from the specialty to the medical clinic. A complete physical examination of every patient applying at the clinic is ideal but cannot be made on account of the large amount of work necessary. The importance of a periodic examination, however, should be impressed on the patient and this makes it incumbent on the hospital to provide facilities for these examinations for patients unable to pay a private physician. The periodic health examinations should be carried on in a separate clinic especially fitted for the work. While the determination of eligibility apart from the medical decision as to the need for care rests on the administrative department of the clinic, it is the physician's function to furnish the medical data on which to determine the patient's eligibility for treatment. The kind and extent of medical service required must be learned before a patient is either accepted or refused. It is not possible, therefore, to reject a patient before examination

and diagnosis have been made. In discussing staff rotation in clinics, the committee deprecates the danger in the tendency of men working on clinic staffs toward an increasing specialization. Thorough training in general medicine, the report says, is essential to the proper development of a physician whether he intends to practice a medical or a surgical specialty.

NORTH DAKOTA

Diphtheria Epidemic at Wishek.—An outbreak of diphtheria at Wishek had resulted in the death of four persons over a six weeks' period up to August 31.

Personal.—Dr. John G. Lamont has resigned as superintendent of the North Dakota State Tuberculosis Sanatorium, San Haven, to become associate medical director of the St. Louis County Sanatorium near Duluth; his successor is Dr. Charles MacLachlan of New Rockford, who also succeeded him as secretary of the North Dakota State Medical Association.

OHIO

Dr. Heizer Goes to New York.—Dr. Lewis Wade Heizer, for eighteen years with the Cincinnati Health Department, tendered his resignation, September 12, as assistant city health director and chief school medical inspector to become school medical inspector at Watertown, N. Y. Dr. Heizer is a graduate of the University of Cincinnati College of Medicine.

Another Mental Hygiene Clinic.—The Community Chest of Dayton has appropriated $10,000 for operating expenses for a mental hygiene clinic, which will start functioning in September under the direction of Dr. Elias C. Fischbein. Helen Hubbert Cauldwell, formerly instructor at the University of Wisconsin, has been appointed psychologist to the staff; Dr. Herbert W. Harris will be the medical examiner and Miss Emily Moores the psychiatric social worker.

Health at Canton. — Telegraphic reports to the U. S. Department of Commerce from sixty-two cities with a total population of about 29 million, for the week ending September 7, indicate that the lowest mortality rate (4.9) was for Canton, and that the mortality rate for the group of cities as a whole was 11.1. The mortality rate for Canton for the corresponding week last year was 8.5, and for the group of cities, 10.2. The annual mortality rate for sixty-one cities for the thirty-six weeks of 1929 was 13.4, as against a rate of 13.1 for the corresponding weeks of 1928.

Society News.—Dr. Frank C. Mann, Rochester, Minn., addressed the Academy of Medicine of Lima and Allen County, August 26, on "Physiology of the Liver."——The Tri-County Medical Society (Van Wert, Paulding, Mercer) was addressed recently at Van Wert by Dr. Andrews Rogers, professor of obstetrics, Ohio State University College of Medicine, on "Practical Obstetrics." —— The Tuscarawas County Medical Society was addressed at Dover, July 11, by Dr. Charles J. Miller, New Philadelphia, and by Dr. Edgar C. Davis, Dover, on "New Hearts for Old."——Drs. Monford R. Kellum and Richard P. Bell made a score of 81 in the annual golf tournament of the Cleveland Academy of Medicine, August 31, and in the playoff Dr. Kellum won.

Hospital News.—The old St. Luke's Hospital, Cleveland, has been sold to the Polyclinic Hospital Company.——A new municipal hospital is being constructed by the city of Willard. ——The eight story surgical annex of the Akron City Hospital has been completed, bringing the total bed capacity to 350.—— A twelve room addition is being constructed at the McClellan Hospital, Xenia.——The Marietta Hospital, which has been in operation for thirty years, closed its doors recently when the new Marietta Memorial Hospital was opened.——The Christian R. Holmes Hospital, Cincinnati, which was dedicated recently, was a gift of Mr. and Mrs. Charles P. Taft, William Cooper Proctor and Mrs. Betty Fleischmann Holmes.

Cleveland Clinic Moves Into New Building.—The new eight story wing of the Cleveland Clinic Hospital has been completed. The clinic moved into the new structure, August 16, from the old dormitory of the Laurel School in Cleveland Heights, where it had been located temporarily. The results of experiments conducted with the structure in which the disaster occurred, according to a correspondent in the *New England Journal of Medicine*, condemned its further use for the care of patients. The experiments showed, it is said, that the exposed sides of some bricks of the old building were covered with a black film. This film, when heated in a retort, gave off a gas which when filtered through water and then passed into a chamber containing a rat killed the animal in about twenty-five minutes with symptoms of carbon monoxide poisoning. If four times the amount of material scraped from an unblackened brick was thus treated, the gas had no effect on a rat. If the brick was first soaked in water, and any part of it was then treated as described, the gas evolved would kill a rat, showing, the correspondent says, the solubility of the toxic material in water.

PENNSYLVANIA

Society News.—Dr. Harry R. Trick, Buffalo, addressed the Second Councilor District Medical Society, Valley Forge, September 12, on "Infections of the Hand," and Dr. Joel T. Boone, U. S. Navy, physician to President Hoover, on "Common Sense in the Practice of Medicine."——The Montgomery County Medical Society was addressed at Norristown, September 4, by Dr. James Allen Jackson, Danville, on mental hygiene.—— Dr. Richard A. Kern, Philadelphia, addressed the Lancaster City and County Medical Society, September 4, on "Bacillus Abortus Infection in Man."

Philadelphia

Personal.—Hugh Carter, Ph.D., of the department of sociology, University of Pennsylvania, has joined the staff of the Committee on the Cost of Medical Care at Washington, D. C. ——Dr. James C. Small, director of laboratories, Philadelphia General Hospital, resigned, September 1, and will engage in private practice.

WASHINGTON

Hospital News.—The Payne Private Sanatorium, Spokane, was destroyed by fire, August 24. —— The Northern State Hospital at Sedro Woolley is constructing a new men's ward building which is to be completed by April 1, 1930.——The Deaconess Hospital, Spokane, is constructing a five story addition which will increase its capacity to 250 beds.

Society News. — The Canti Cancer Film was presented before the King County Medical Society, Seattle, September 9, by Dr. Harold B. Thompson.——Dr. Samuel E. Lambert, Spokane, was elected president of the Public Health League of Washington at the annual meeting in Yakima.——The Pierce County Medical Society, Tacoma, was addressed, September 10, by Drs. Harry G. Willard and Sydney M. MacLean on the surgical treatment and the radiologic treatment, respectively, of carcinoma of the uterus and cervix.

WEST VIRGINIA

Society News.—The committee on scientific work of the West Virginia State Medical Association at a meeting in Parkersburg, September 5, decided to divide the program for the next annual meeting equally between state members and out-of-town speakers.——The Stuckert Obstetrical Film, prepared recently at Jefferson Medical College, Philadelphia, was presented before the Fayette County Medical Society, Montgomery, September 10.

WISCONSIN

"Certified Rooms" Mean Nothing in Wisconsin.—The state board of health of Wisconsin announces that the advertisement "certified rooms" seen along the highways in Wisconsin has no official significance, as there is no inspection of rooms or homes made by the state.

Regulating the Sale of Fireworks.—Governor Kohler has signed the Buntin bill in an effort to check the number of accidents caused by fireworks. The bill prohibits the sale of explosive canes, toy pistols and of firecrackers more than 2 inches long, and requires that displays of fireworks in villages and other municipalities be subject to regulation by the municipal officers.

Smoke Ordinance Too Drastic.—The council of Beaver Dam disapproved at a meeting, September 3, an ordinance introduced by the board of health intended to abate an alleged smoke nuisance. Representatives of local manufacturing plants held that the ordinance was too drastic and would require the installation of equipment at an expense entirely out of proportion to the possible results. The vote was twelve to three.

Society News. — The Barron - Polk - Washburn - Sawyer - Burnett County Medical Society was addressed at Barron, September 3, by Dr. Allan S. White, Rice Lake, on "Gas Gangrene," and by Dr. Walter G. Sexton, Marshfield, on "Urinary Calculi."——The Eleventh District Medical Society at its annual meeting at Solon Springs, August 12, elected Dr. Fred G. Johnson, Iron River, president, and selected Rhinelander for the 1930 meeting. About fifty Upper Wisconsin physicians attended.

Society Appoints an Executive Secretary. — The trustees of the Milwaukee County Medical Society, Milwaukee, unanimously voted recently to employ a full-time executive secretary and Mr. Theodore Witprud has been appointed, effective October 1. Mr. Witprud for eight years has been manager of a clinic at Frederic, previous to which time he was a cashier in a bank. At the last presidential election he was chosen elector from the eleventh congressional district. He is married and has two children.

Personal.—Dr. John W. Prentice, Amery, for several years secretary of the Pierce-St. Croix County Medical Society has tendered his resignation as he will move to Ashland, and Dr. Arthur E. McMahon, Glenwood City, has been elected secretary. The society was addressed, August 23, by Drs. Louis E. Daugherty and David G. Gardiner of St. Paul on "Surgery of the Chest" and "Pulmonary Tuberculosis," respectively, and by Dr. Harry P. Ritchie on "Modern Progress in Surgery." The society presented a fountain pen to Dr. Eugene L. Boothby of Hammond on the occasion of his eightieth birthday. —— Dr. Philip Desbois has been appointed health officer of the city of Peshtigo.

GENERAL

Infantile Paralysis Appears. — The newspapers have reported outbreaks of infantile paralysis at Middleboro, Ky., Scottsville and University, Va., Toledo, Ohio, Rochester, N. Y., Fayette County, Ky., Chilton County, Ala., and Niagara Falls, N. Y.

Government Warns Gum Manufacturers. — Food as defined by the federal food and drugs act includes all articles used as food, drink, confectionery or condiment. As chewing gum contains as much as 75 per cent of soluble sugars, it has been held to come within the purview of the law if shipped within its jurisdiction. The food, drug and insecticide administration has learned that some brands of chewing gum are labeled to indicate that they contain fruit juice or true fruit flavor when, in fact, they are characterized by their content of artificial flavor. The government considers that they are therefore misbranded and warns manufacturers immediately to bring their labels into compliance with the law.

Knowing the Birth and Death Rates.—The United States is approaching the time when it may know its own birth and death rates from official reports of the census bureau and the state and local health authorities. The infant death rate in 719 cities in the birth registration area was studied by the American Child Health Association. It was found to be 68.3 for 1928, the lowest ever achieved except for 1927 and, the association says, two thirds of what it was fifteen years ago. Cities of 250,000 or more population with the lowest infant death rates were Seattle and Portland, Ore., which had rates of 43, and San Francisco with 46. In cities between 100,000 and 250,000 population, the lowest infant mortality rates were in Oakland, Calif. (47), Spokane, Wash. (49), and Des Moines, Iowa, and Cambridge, Mass. (53). Among ten large cities, New York has improved its relative standing from third place in 1916-1920 to first place in 1925-1928. Philadelphia has advanced from seventh to fifth place, and Cleveland from fourth to second, while Boston has retired from fifth to ninth place, St. Louis from second to fourth and Los Angeles from first to third. The improvement in reporting the birth rate is shown by the fact that in 1915 official birth rates were reported only from ten states and the District of Columbia, while in 1928 they were reported from forty-four states and the District. An additional state was added to the birth registration area in 1929, leaving only three states whose birth rates are not yet acceptable.

Society News.—At the thirty-fourth annual meeting of the National Medical Association, Newark, N. J., Dr. Lightfoot A. West, Memphis, was made president; Dr. Walter G. Alexander, Orange, executive secretary; Dr. J. R. Levy, Florence, S. C., treasurer, and Dr. John A. Kenney, Newark, editor of the association's journal.——Among other physicians, Ray Lyman Wilbur, secretary, U. S. Department of the Interior, Washington, D. C., will address the joint meeting of the child hygiene section of the American Child Health Association, the American Public Health Association and the American Association of School Physicians, which will meet at Minneapolis, September 30-October 5.——Harold Hoffding, Copenhagen, Denmark, was elected president of the next International Congress of Psychology, which will meet at Copenhagen in August, 1932. ——The League of Red Cross Societies made public in Paris, September 13, a report recommending the formation of an international association for the prevention of blindness, following a two year survey of the blind population of the world. A provisional committee to establish such a permanent body met in Scheveningen, Holland, September 14. A total blind population of 1,200,000 was indicated by the information available to the League of Red Cross Societies, but since it represented less than half the total world population, the blind population of the world was estimated at about 3,000,000.—— The annual congress of the French Surgical Association, to be held at the University of Paris, October 7-14, will deal especially with spinal surgery.

Meeting of Medical Library Association.—The annual convention of the Medical Library Association was held in Cleveland, September 3-5. At the opening session Dr. Archibald Malloch took for his presidential address the subject of "Medical Bibliography." The remainder of the session was taken up with papers on the Cleveland Medical Library, the Cleveland Public Library, the Library of the Rockefeller Institute, and the Welch Medical Library at Baltimore, respectively, by J. C. Harding, librarian; Miss Louise Prouty, vice librarian; Miss L. M. D. Trask, librarian, and W. S. Shules, assistant librarian. Fire insurance and fire prevention for libraries was taken up Wednesday morning. E. B. Berkeley of Owen, Crowell and Company and Frank E. Greene, both of Cleveland, read carefully prepared papers on "Insurance for Libraries" and "Fire Prevention" which led to a brisk discussion. James F. Ballard, director of the Boston Medical Library, spoke on "Appraisal for Insurance Purposes." Dr. Morris Fishbein of the American Medical Association described the method of preparation of the *Quarterly Cumulative Index Medicus* and stated that in future numbers new editions of books would be entered. He also offered to consider carefully material selected by the association from unindexed periodicals for publication in the *Index*. The meeting, September 4, was a round table discussion of the "Problems of the Small Library" conducted by Miss Sabina Waterfield of the Mayo Clinic. At the annual dinner Dr. Irving S. Cutter, dean and associate professor of medicine, Northwestern University Medical School, Chicago, gave an illustrated talk on "Puerperal Fever." The books mentioned by Dr. Cutter in his address were exhibited by the Boston Medical Library. At the business sessions of the convention it was voted to accept the invitation of Montreal for the 1930 meeting. The following officers were elected for the ensuing year: president, Dr. Archibald Malloch, New York Academy of Medicine; vice president, Dr. William W. Francis, Osler Library, McGill University; secretary, Miss Sue Biethan, University of Michigan Medical Library, and treasurer, Miss Mary Louise Marshall, Tulane University Medical Library.

FOREIGN

Personal.—Dr. John J. R. MacLeod, who recently went from the University of Toronto to become professor of physiology at the University of Aberdeen, has been appointed a member of the British Medical Research Council to succeed Prof. Edward P. Cathcart.

Assisting American Students in Germany.—The Association of Medical Instructors of Berlin University writes that it will gladly assist American physicians who come to Germany to study to find suitable lodgings, advise them as to clinics and hospitals and introduce them where it is considered convenient. This organization arranges monthly courses during the semester and special courses in March and October. Its headquarters are at the Kaiserin Friedrich-Haus, NW 6, Luisenplatz, 2-4 Nahe Der Charité, Berlin.

Hospitals Devastated by Moslem Riots. — During the Moslem riots in Palestine, an Arab group entered the Rothchild Hospital in Jerusalem, using a French flag as a ruse, but the hospital was successfully defended. The Straus Health Center in Jerusalem was turned into a hospital after the massacre of theological students at Hebron; hundreds of wounded were cared for there. The donor, Mr. Nathan Straus, New York, cabled a contribution of $50,000 for current expenditures. The dispensary building during the Hebron massacre, one of the best buildings in Palestine, was destroyed by fire. The clinic building at Kastinia was destroyed along with the village, and one Hadassah physician was killed. An infant welfare station in Haifa was destroyed. The hospital at Safed in upper Galilee was saved, but the entire Jewish section of the city was burned. A member of the staff of the hospital, Mr. Maman, was killed. To care for refugees from Jerusalem, Haifa and Tel Aviv, the largest cities in the country, government hospitals increased their bed capacity, the missionary hospitals rendered assistance, and the Hebrew Polytechnic Institute was converted into a hospital. About 200 Jewish people were killed, and 1,000 were wounded.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 24, 1929.

A National Maternity Service

The Council of the British Medical Association has published a memorandum outlining a national maternity service scheme for England and Wales. The memorandum was adopted at the recent annual representative meeting as a contribution toward the establishment of such a scheme on lines acceptable to the medical profession. The scheme is based on the desire to improve the present unsatisfactory morbidity and mortality rates. Any such scheme, it says, must cover the antenatal period as well as the actual confinement. The aim is the provision for every pregnant woman of the services of a midwife and a physician, the latter taking responsibility antenatal, natal and postnatal, attending at the confinement if he thinks necessary, if desired by the patient, or if sent for by the midwife on her finding some abnormality. The scheme is based on the three principles that (*a*) the normal case can be safely treated at home; (*b*) material mortality and morbidity can be greatly reduced when proper antenatal care and supervision during confinement are provided in all cases, together with institutional accommodation for cases of complicated labor; (*c*) maternal morbidity can be greatly reduced with proper postnatal care and treatment.

Italian Plagiarism of Sir Ronald Ross's Discovery

Sir Ronald Ross's old feud with certain Italian scientists has been revived by a book just published by him, entitled "Letters from Rome." His famous discoveries of how malaria germs are carried by mosquitoes was made in 1897 when he was an obscure major in the Indian medical service and after years of hard labor under difficulties in India, Ceylon and the Andaman Islands. During his researches he communicated his results to several scientists in England and on the continent, among them Prof. J. B. Grassi, who was himself at work on malaria research and who in 1896, after following false trails, worked along the lines of the Ross experiments and successfully inoculated man with malaria. He began then to publish monographs in which his claims to priority in the discovery of the secret of malaria infection were gradually extended. The "Letters from Rome" are written to Ross by a British physician, Dr. Charles, who was in personal contact with Grassi in Rome, and they show that Ross was supplying Grassi and other Italian researchers with his own preserved specimens of infected mosquitoes in the autumn of 1898. Monographs which belittle the discoveries of Ross and other British scientists were published by the Italian researchers. Ross now writes about them as follows: "On comparing Dr. Charles's letters to me with those subsequent publications of Grassi, Bignami and Bastianelli, it is impossible to avoid certain conclusions regarding their intentions. Themselves recognized men of science and expert and dexterous writers, they found themselves anticipated in the solution of the malaria problem by an obscure worker living in a distant country, and hampered at every turn by the conditions under which he worked. His writings, buried in the volumes of foreign journals, necessarily fragmentary, hesitating and faulty —as new work must ever be—had been read by few and were open to unscrupulous attack by the suggestio falsi and suppressio veri. The temptation was too strong to be resisted. The methods of this student could easily be followed, some of his results absorbed, others minimized, and the rest discredited. Fortunately, the student had taken care to keep several distinguished men acquainted with his labors or else but little indeed would have been ever heard of them—a thing not unknown in the history of science." Ross describes his book as "a history of what was probably the most impudent scientific piracy ever attempted."

Fatal Safety Device

How a bandage attached to a child, aged 13 months, as a safety device to prevent it falling from its cot caused its death was the subject of a coroner's inquest. A nurse said that she secured the child by a bandage tied to the rails on each side and attached to the back of the child's dress. Later she saw the child hanging over the side of the cot. The medical superintendent of the hospital said that proper restrainers were available and that the bandage need not have been used. If he had seen the bandage in use he would have condemned it. Recording a verdict of death by misadventure, the coroner said to the superintendent: "I leave it to you to see that better precautions are taken in future." A quite similar case was reported in a previous letter.

The Regional Planning of London: A Green Belt

In the past the growth of London has been left to private initiative, and the provision of open spaces has consequently been haphazard. Now the Greater London Regional Planning Committee is about to lay before the government, and in particular the minister of health and the minister of transport, important proposals for making the work of regional planning more effective. A more adequate distribution of population and industry throughout the Greater London Region is the basic problem. Its solution underlies all efforts to prevent sporadic building and to preserve the amenities of the open lands not already spoiled by indiscriminate development. On this must depend the centralization of those national civic functions and the complementary decentralization of many industries and other activities which can be better located in subsidiary centers. The next point is to secure the best means of reserving an adequate proportion of open space for town populations for pleasure and picnic resorts, playing fields, accommodation lands, air landing fields and allotment gardens, and generally to provide breathing space and to preserve the purity of the air. It is hoped that the provision for these needs may take the form of a green girdle or chain of open spaces which would set limits to the solidly built up areas of London. In regard to regional planning, the necessity for some means of locating development and of reserving areas of open land alike in the public interest and in the interest of landowners themselves is becoming evident. The committee is convinced that this is really the key to the situation. The need has been particularly brought home to it in studying the question of playing fields and the green belt round London. The National Playing Fields Association has carefully estimated the requirements per thousand of population of land for recreation of all kinds. There is needed for the present population of the Greater London region something like 60 square miles of additional land. To meet the need for other open spaces and to preserve for such purpose one tenth of the region as unbuilt on, a further 140 square miles or so would be needed. To such an extent has London been allowed to develop without adequate reservation of open land, particularly as regards playing fields, that even if the necessary area could now be provided it would probably be impossible to convey the people to and from these recreation areas. Month by month lands in use for playing purposes are being absorbed for residential and industrial development. The playing fields are being pushed farther and farther out making access to them increasingly difficult.

Health of the Children in London

Report has just been issued for 1928 of Dr. Menzies, health officer and school medical officer for the London County Council. He points out three great influences which determine the health of children—heredity, environment, and the care exercised by

the mother. To appreciate the work of the school medical service, the gradual improvements of the separate years must be added together. The year 1928 has been especially good. "Substantial advances are noted all along the line. Particularly gratifying is the continued improvement in standards of personal hygiene." The cooperation of the parents is a sure means of success, but to educate them up to a higher standard of care takes time. The total number of children inspected during the year was 357,424. Every child, in addition to the medical inspection, is seen at least three times a year by the school nurse. During the year increased attention has been paid to the rheumatic child, and, in addition to the existing centers, two new supervisory centers at voluntary hospitals have been established. The rheumatic clinic at the Hospital for Sick Children, Great Ormond Street, is in close cooperation with the council's children's care system; and two supervisory centers for rheumatism have been established. Special researches have been made during the year, including investigation of flatfoot in school children; the incidence of oral malformation; the development of refractive errors of the eye during school life; the physical and mental characteristics of children with high myopia, and the condition of children in the hop fields. The provision for open-air education includes seven open-air schools, accommodating 1,200 nontuberculous children; seven day open-air schools for 540 tuberculous children; five country and seaside convalescent camps for 484 children for short periods, through which 4,600 children pass annually; and 171 day open-air classes in school playgrounds, parks and open spaces for 4,040 children. The improved attendance of the children at open-air schools who formerly were chronic "out of school" cases is noteworthy. London, in spite of its advantages of hospitals and medical services, remains one of the worst centers as regards the prevalence of diphtheria. Among school children the incidence of diphtheria has remained fairly constant as compared with 1927. The problem of the "carrier" still taxes the resources of the public health authorities. In 1926 a clinic was opened at Guy's Hospital to study and to deal with these cases and has proved so successful that two others, one at St. Mary's Hospital and the other at the London Hospital, have been provided. During 1928 the number of fatal street accidents among children under the age of 15 was 149, the same as in 1927.

The Loss to Physicians from Motor Accidents

As mentioned before, motor accidents have become a positive tax for physicians who live near main roads. A physician writes to the *Daily Mail:* "I am a physician with a considerable practice and I have the misfortune to live close to a main road on which there is heavy motor-car traffic. In the last two or three years the number of accidents near my house has increased so much as to involve me in incessant work and heavy expenditure. I am called at all hours of the day, often when I should be on my rounds, to attend to victims. Sometimes they are brought to my house in a desperate condition. My appliances, my splints, my bandages are taken without any payment and are never returned. In the great majority of cases I can recover nothing. Three times while engaged in bandaging the injured in the midst of the crowd, which is apt to collect on such occasions, I have had my pocket picked. Repeatedly I have had small articles taken from my car. And I find that my experience is identical with that of many of my fellow physicians situated as I am. Can nothing be done to secure fair play for the physician? Or is he expected to lose his own practice and provide gratuitous attendance for everybody on the road, rich and poor?"

Physicians' Liability to Act as Witnesses

In his court Judge Gwynne-James defined the position of physicians in regard to their liability to give evidence as follows: "A misconception seems to exist in the minds of certain professional men as regards their obligations to appear as witnesses. My attention has lately been called to two instances of misunderstandings. In each of these cases physicians refused to give evidence in court on behalf of their patients unless they were paid special fees. In one of these, a special fee of $105 was demanded; in the other, a less amount. Such demands are of no avail, and cannot be enforced. All a litigant has to do who desires the presence in court on his behalf of a medical or other witness is to serve him with a subpena, together with proper conduct money. This conduct money is for traveling expenses, if any, to and from the court, and in the case of an ordinary medical witness an extra payment of $5, which may, in an exceptional case, be increased not beyond $25. This having been done, the witness is obliged to appear in court and obey his subpena. He can demand no special fee, and if he does not appear he is liable, for contempt of court, to a fine and imprisonment."

PARIS

(From Our Regular Correspondent)

Aug. 14, 1929.

The Treatment of Puerperal Infection

Before the Société de gynécologie, an interesting discussion took place recently concerning the relative merits of two new methods of treating puerperal infection. Dr. Le Lorier supported the efficacy of intravenous injections of neoarsphenamine. He pointed out that its action is more regular and more potent on the evolution of septicemia than all other methods hitherto employed, particularly those that rely on colloidal metals or on proteinotherapy. Some of the women whose cases Le Lorier described were in a very grave condition. The author felt justified in affirming that it was only the neoarsphenamine that saved them. Following the first injections, for which, in the most serious cases, daily doses of 0.15 Gm. were employed, a marked improvement was noted. This method, according to M. Le Lorier, deserves to occupy henceforth an important place in the treatment of puerperal septicemia. This opinion was confirmed furthermore by M. Cathala, who emphasized the sensitiveness in vitro of the streptococcus to arsphenamines, which explains why such arsenicals may have a particularly effective action on streptococcus septicemias. But the main thing, added the author, is to build up the general health of the women and thus aid them in resisting the infection.

A second method was then expounded by MM. Devraigne and Maurice Mayer, who have used intravenous injections of aseptic pus with success. The administration of this remedy intravenously constitutes the new element in this method. Devraigne and Mayer have secured excellent results with it, even in almost hopeless cases. The treatment does not expose the patient, as one might suppose, either to embolism or to anaphylactic shock. The authors base their opinion on a total of fifty-one observations, some of which are particularly convincing. In eight of these cases, the blood culture was positive. Some of the women already improved by the treatment had a relapse after the omission of this treatment, which seems to indicate that this method has only a transitory action and that the aseptic pus acts only in itself without effecting an increase in the defense of the organism. Its utilization does not exclude the other procedures capable of strengthening the defense.

Overloading of Pupils with School Work

The Academy of Medicine continues to deliberate on the subject of overloading curriculums, and the general public is following the discussion with great interest. Unfortunately, the members of the academy have been unable as yet to reach any agreement on the subject, and opinions diametrically opposed are supported by physicians equally eminent. The report of Dr. Lesage, which was discussed in a previous letter, presented the conclusion that the health of children is impaired at school by the excessive hours of study and the undue number of sub-

jects that have found a place in the curriculum. It was assumed by many that the academy would adopt his conclusions without discussion, as the facts brought out were so evident. Several voices, however, were raised against them. Prof. Léon Bernard denied that pupils were overloaded with school work; overloading, in his opinion, is merely an excuse offered by lazy pupils. Dr. Vaillard, who is "médecin inspecteur général," said that statistics did not show any increase in the morbidity of school children in recent years. Professor Pinard protested against the allegation of Dr. Lesage that the development of tuberculosis was favored by overstudy. The preceding generations had had to work, during all their studies, just as hard as the present generation, and their health had not suffered thereby. (It may be added that Professor Pinard is 92 years old.) Madame Curie expressed the opposite view. When a child attends the *lycée* from 8 o'clock in the morning until 4 o'clock in the afternoon, she said, and when he studies his lessons until called to dinner and resumes his studies after dinner, the term "overstudy" or "overloading" is certainly applicable. M. Lapicque was even more categorical in his statements: "When a horse has remained too long in the harness, we say he is overworked. Our children are being kept too long in the school harness. Furthermore, a large part of the work that they do is useless. I am a professor at the Sorbonne and an examiner for the bachelor's degree. I affirm that this title has no value and that three fourths of the subjects of which a knowledge is required might easily be omitted." Some members remarked that, while it may be true that the work is strenuous, the pupils have long periods of rest, two days every week, two weeks at Easter, and two and a half months after July 14. The academy was in doubt what attitude to take in view of these divergent opinions. It decided to add MM. Dumas and Lapicque to the committee for the study of the question, which made it possible to postpone the report until after the vacation period.

Syphilis Transmitted by Blood Transfusion

Several cases of transmission of syphilis by blood transfusion have been recently reported by various authors, which begins to awaken some apprehension with regard to that valuable mode of treatment. These facts are, to be sure, not absolutely new, but the number of cases increases in the measure that blood transfusion becomes more general. Spillman and Morel, and Fildman have published cases previously. Constantinescu and Vatamann have recently published a new case. A woman, aged 42, exhausted by hemorrhages, received a blood transfusion from a person who was not examined sufficiently but who denied having ever contracted syphilis. At the end of two months and a half, the woman developed a typical roseola, without any primary lesion, the husband being free from any manifestation of syphilis. The donor, however, on being examined a second time, gave a frankly positive Wassermann reaction. The long duration of the incubation period was attributed by the authors to the possible fact that the spirochetes were few in number and had withdrawn to some recess of the organism, where they multiplied before symptoms of their presence appeared. The case presented by M. Dufour before the Société médicale des hôpitaux de Paris is more puzzling. A woman having received a blood transfusion presented a roseola at the end of two months and a half. The donor, however, had been previously subjected to several blood examinations, all of which had been negative. Before the society, a long discussion developed over the point as to whether or not the blood of a subject with a negative Wassermann reaction could be infective. MM. Marchal Jansion and Tzanck were convinced that it could not be. On this occasion, M. Tzanck reported a very peculiar case of blood inoculation. A woman who had had a severe hemorrhage after an abortion and who had had several pregnancies interrupted by miscarriages received a blood transfusion from the man responsible for her pregnancy. Forty days later, she developed a typical roseola, with a positive Wassermann reaction. M. Marcel Pinard pointed out that this case raised the whole problem of syphilis due to conception.

Deaths

Dr. Pierre Marie, who died recently at the age of 38, was the son of Dr. Pierre Marie, retired professor of pathologic anatomy at the Faculté de médecine. The son was one of the most brilliant department heads of the Institut Pasteur. During his scientific researches on the toxin of botulism, he inoculated himself accidentally and contracted the disease, from which he died, after a long period of terrible suffering.

Dr. Henri Reynès, who died recently at the age of 61, was a professor at the Ecole de médecine de Marseille. He had charge of the instruction in gynecology and surgery and is the author of numerous works. He was to have served as vice president of the French Congress of Surgery, which is to meet in Paris in October. Just recently, he established at Marseilles an important anticancer center.

Prof. Eugêne Lichteig, director of the dental clinic at the Faculté de médecine de Strasbourg, committed suicide with a revolver, at the age of 50, for reasons that have remained unknown.

AUSTRALIA

(From Our Regular Correspondent)

Aug. 1, 1929.

A Survey of Women in Industry

Since women have permanently established themselves in industry, working conditions must be so arranged that no undue harm to health ensues. The adolescent girl is the object of special anxiety, as she is particularly susceptible to such influences as bad habits of posture, excessive strain and unhygienic working environment. The problem of making special provision for women in industry is not only of social and economic but also of national importance, in that the female workers of today must be considered as the actual or potential mothers of the next generation.

With these considerations in mind, the division of industrial hygiene of the commonwealth department of health organized a preliminary survey of the health and working conditions of women in industry in Victoria in 1928. The survey covered 3,502 women employed in the commonwealth offices and factories, and in the rubber, manufacturing grocery, jute bag, confectionary, boot, cardboard box, printing, clothing, textile, metal and tobacco trades. It was found that the working environment of many of the factories did not attain to a satisfactory standard; in a few cases it was described as poor.

A relation was found to exist between the rate of working and the incidence of dysmenorrhea, headache or complaint of fatigue. In the dusty occupations, especially in the jute and tobacco trades, the employees complained of almost continuous colds, coughs and sore throats. It was recommended that a detailed physical and roentgenologic examination be made of the chests of employees engaged in these dusty occupations.

A high incidence of headache in the clothing and boot trades was ascribed to eye strain.

The relationship between posture and dysmenorrhea was studied, and it was found that this symptom occurs more frequently among workers who stand than among those who sit, and those who suffer least are able to alternate sitting and standing.

In the fruit canning industry, the fur on peaches (the "goofer feathers" described by the "two black crows") was responsible for a skin rash characterized by slight erythema and papules on the face, neck, forearm and especially the cubital fossa of the workers. The rash readily responds to treatment with a soothing lotion. Fruit juices alone or mixed with sugar solu-

tion were considered responsible for the acute or chronic perionychia of fruit workers.

The health of female office workers received consideration, and in view of the absence of legislative control over the conditions of the large number of workers in this environment, it was recommended that an investigation of this group be undertaken. The smaller establishments particularly offend in not providing suitable provision for healthy conditions.

An eyesight examination was considered advisable especially for the juvenile candidates for employment in the clothing and boot trades on account of the close nature of the work.

The value of a medical department in charge of a trained nurse was emphasized.

The rapid increase in the numbers of women and adolescent girls employed in industry during recent years warrants a more intense activity in the direction of the supervision of their health.

First Appointment to New Chair of Obstetrics at Melbourne University

Dr. Robert Marshall Allan has been appointed to the chair of obstetrics at the Melbourne University. This is the first chair in a clinical subject at Melbourne. It not merely is a university chair, but also carries with it the position of state director of obstetrics, thus making the holder the virtual and actual leader in the subject in the state.

The chair was established by the university with the assistance of the state government and the Edward Wilson (the *Argus* newspaper) Trust. The latter's contribution is £20,000 in government bonds. The chair carries with it the salary of £2,000 a year. Private practice will not be allowed to the professor, but he will be available for consultations at no cost with the medical advisers of patients in the two chief obstetric hospitals of Melbourne. A sum of £1,000 a year is available for the provision of additional staff or research facilities as the professor desires. The tenure of the professorship will be for a period of five years.

Dr. R. Marshall Allan, M.C., M.D. (Edin.), F.R.C.S.E., F.C.S.A., L.M. (Dublin), has occupied the position of director of obstetric research in the University of Melbourne during the past four years.

Local Government and Health Administration in Australia

During recent years in Australia, there has been a rapid development of local government until at the present time almost the whole area has been brought under the control of municipal or district councils, the exceptions being the more thinly populated parts, and some of the territories under commonwealth jurisdiction. Under the health acts of the several states, these authorities become the local units of health administration in regard to local sanitation and hygiene. A trend in the development of local government is the "greater-city" movement, whereby numerous small areas are combined and controlled by a more highly organized administrative body, with resulting improvement in efficiency and economy.

The medical officer of health appointed by the authority acts as the technical officer together with such inspectoral staff as may be appointed. The medical officer is usually a local general practitioner, except in the case of some of the capital cities which have a whole-time specialist medical officer. The several state health acts cover the terms of these appointments.

The rates that are levied by these authorities for purposes which include sewerage, drainage, water supply, street cleansing and garbage collection are controlled by local government acts in each state. The cost of domestic health is a charge against the locality or community, and the incidence of the tax rests on property or land. Speaking generally, the local authorities are permitted a considerable degree of self-government, but in health matters, the state department of health stimulates, advises and, when necessary, coerces the local authority. Most of the states are divided into health districts, each under the control of a health officer, and this facilitates administrative control of the local authorities.

Should the local authority default in its duty toward the health of the community as regulated by state law, the state health department has power to carry out any necessary work at the expense of the local authority. In case of emergency the state health department can take over all or any of the powers and duties of the local authority at the latter's expense.

The main functions delegated to the local councils have to do with nuisances; general sanitary provisions; offensive trades; sale yards; infectious diseases and hospitals for infectious diseases; housing; boarding, lodging and eating houses, and rats, flies and mosquitoes.

The various divisions of the commonwealth department of health act in an advisory or consultant capacity to the local authorities. These facilities, especially those of the division of public health engineering, have been freely utilized by the local authorities.

Dental Science in New Zealand and America

Problems relating to dentistry in America, England and France were investigated by Mr. Claude H. Moses, a past president of the New Zealand Dental Association, who has returned to Auckland from a year's tour abroad. Mr. Moses believes that the dental school in Dunedin will compare favorably with any in America, which he considers leads the world in this respect.

Mr. Moses visited the dental college in Paris, the largest institution of its kind in France, and he also inspected colleges in England and in the United States. "In France, practically nothing is done in treating the teeth of the poor," he said. "England is only on the fringe of this work, while in the United States I found much good work was being done."

Mr. Moses said that the American dental schools were very advanced, and he was strongly of the opinion that Mr. F. C. Dodds, professor of dentistry in Dunedin, should be sent to the United States to investigate the latest methods being employed there. He found that many of the American dental schools favored an exchange of professors, and if this could be arranged in the case of New Zealand and the United States he thought it would be of great benefit to the former. He intends to take the matter up with the New Zealand Dental Association and with the authorities of the Otago Dental School.

"The teeth of the people in the United States are well looked after, and are, on the whole, better than those of the people of England," said Mr. Moses. "This is largely because the American people consume more fresh food. With regard to the controversial subject of the extraction of teeth, I found the general view among dentists in the United States is that unless a tooth showed decided signs of decay it should be conserved."

Street Accident Statistics for 1927-1928

The returns of accidents occurring in public streets in Australia during 1927-1928, which do not, however, include those occurring in that portion of New South Wales outside the metropolitan traffic district, show that 860 persons were killed and 14,233 injured in traffic accidents.

Motor vehicles were concerned in accidents resulting in the death of 680 persons and injuries to 11,758. The figures for all accidents represent increases over those for the previous year of 3 per cent and 14 per cent, respectively, of persons killed and injured, while those in which motor vehicles were concerned increased by 15 per cent and 17 per cent, respectively.

The total number involved in traffic accidents was therefore 15,093. The population of Australia is just over 6,000,000, and therefore 2.5 per thousand of the population were reported as injured or killed in street accidents in twelve months.

BELGIUM

(From Our Regular Correspondent)

Aug. 21, 1929.

Epidemic of Acute Anterior Poliomyelitis

In an address before the Société Belge de Neurologie, Van Bogaert recently discussed the symptoms which occurred in twenty-three patients with acute anterior poliomyelitis. The epidemic took place in the province of Antwerp in May, 1929. It centered chiefly at Willebroeck, where ten cases were reported. Three cases occurred in Lierre, and the remainder in Antwerp, four in the same neighborhood.

The disease was of the spinal type, with baffling symptoms. After from three to four days of relatively low temperature, accompanied by digestive disturbances, incomplete paralysis and meningeal symptoms developed. Extensive hyperesthesia of the involved extremities became evident, but the effect on the general condition was comparatively slight. Misleading periods of apparent recovery followed with restoration of normal function for a day or two. Examination of the cerebrospinal fluid revealed an excess of albumin and a cell count of from 6 to 80 lymphocytes per cubic millimeter. Three cases ended fatally, after the development of Landry's paralysis in hyperacute form.

Van Bogaert stressed the importance of recognizing the disease early in the preparalytic stage, and advocated treatment by the methods of Netter (intramuscular injection of the blood of a cured patient) or of Pettit (serotherapy). During an epidemic he favors treatment by one of these methods, in every child that develops a digestive disturbance with a syndrome of meningeal involvement or hypersensitivity with lymphocytic reaction of the cerebrospinal fluid. Whichever method of intramuscular injection is chosen, an influence on the paralysis is evident only in certain progressive forms or in recurring cases. The severity of the disease cannot be foretold at the onset. In one family, one child was stricken with a mild form and recovered; another developed symptoms of severe paralysis with extensive dystrophy.

The New Hospital of Saint-Pierre

Under the patronage of the queen, the cornerstone of the new hospital of St. Peter was laid. The site is next to the new Faculty of Medicine and its construction is due to the initiative of Drs. Heger and Depage, aided by donations from the Rockefeller Foundation.

Society of Preventive Medicine and Eugenics

The Société belge de médecine préventive et d'eugénique has been founded. According to the statutes the aims of the association are as follows:

1. The study of all problems pertaining to the science of eugenics and preventive medicine.
2. To acquire a complete record of the actual importance of these problems by any means deemed suitable.
3. To found any institutions considered necessary to further its aims.
4. To suggest such changes in every field as may best lead to the achievement of its purposes.
5. To propagate in popular form ideas pertaining to eugenics by which the masses may profit, by any means within the limits of the society.

International Statistical Study of Syphilis

At the meeting of the Defénse sociale contre la Syphilis (association for the protection of society from syphilis), L. Dekeyser (Brussels) presented a report based on statistics obtained from those countries in which the declaration of syphilis is obligatory (Denmark, Sweden, Norway, Finland, the United States and Australia) and from those in which the disease has been the object of special general surveys or has available army and navy statistics.

In Denmark, the mortality increased from one per thousand at the beginning of the century to 1.4 between 1915 and 1920. A drop took place in 1923 to 0.75 per thousand, followed by a further one of 0.60 in 1924. For the same periods in Sweden the mortality was 0.34, then 0.89 and 0.15. Russia presented, between 1900 and 1913, a morbidity of from 7 to 8 per thousand.

The figure obtained from a survey of Germany made in 1913 was 2.47 per thousand (0.71 of which were cases of recent infection). In thirty-seven large cities with an entire population of 37 million inhabitants, 32,972 cases of syphilis were recorded.

Government estimation of recent syphilitic infection in Czechoslovakia was 4 per thousand. The proportion of syphilitic patients in the United States was 1.75 per thousand for eighty-three cities in 1920. In Austria and Poland, syphilis (in all stages) was present in 0.42 per thousand of population in 1925.

From various surveys made in France, Great Britain and Belgium it is evident that a recrudescence of the disease occurred after the Great War (especially in 1920) followed by a steady decrease in the next few years.

The death rate from syphilis is more difficult to obtain than the sick rate. There does not seem to be an increased mortality due to tabes, paresis or aneurysm.

In Great Britain the incidence of paresis from 1911 to 1924 was between 0.03 and 0.04 per thousand of inhabitants. The incidence in Holland was lower. The incidence of neurosyphilis in Japan from 1910 to 1920 was between 0.02 and 0.027 per thousand; in Great. Britain, between 0.012 and 0.016, and in Holland between 0.013 and 0.018.

The statistics prepared by life insurance companies seem to indicate that an increase in mortality is persisting. These statistics, however, are not to be accepted without certain doubts. Townspeople, for instance, are more apt to take out insurance than country people. The number of cases which have been exempted from insurance are not on record. These researches do not date further back than 1893.

According to Gollmer, who based his researches on reports dating from 1895, obtained from the Gotha Life Insurance Company, the increase in mortality due to various causes is as follows: communicable diseases, 10 per cent; malignant tumors, 60 per cent; kidney disease, 64 per cent; diseases of the digestive tract, 84 per cent; cardiovascular diseases, 116 per cent; suicides, 122 per cent; apoplexy, 128 per cent; mental and brain diseases, 145 per cent; paresis, 403 per cent; diseases of the spinal cord, 567 per cent; aneurysm, 580 per cent, and cause unknown, 68 per cent.

From the point of view of economics, the loss due to syphilis is considerable. A loss of 86,188 days of labor was estimated in the United States Navy. In England in 120,000 soldiers and sailors there was a loss of 116,155 days of labor representing a sum of about five million francs. Aside from the actual loss of labor due to the disease, an inhibition of the working ability caused by the syphilitic lesion is evident. This loss is hard to estimate but is proved to exist. In a large American factory the value of the output was increased five and one-half million francs per annum as a result of the treatment of syphilitic workmen. The actual expenditures for the immediate care of syphilitic patients or those resulting from their incapacity are factors of great importance in economics. Among the main expenses may be mentioned the care of tabetic and paretic patients and the insane. In England these expenses were estimated at eighteen and one-half million francs per annum.

The care of children dependent on public benefaction as a result of blindness, deafness, idiocy and various malformations resulting from syphilis constitutes an economic problem. In several institutions for the blind, the infirmities in 13 per cent of the inmates could be traced to syphilitic origin.

Dekeyser stressed the need of intensifying the fight against the disease. It is necessary to combat charlatanism, in all forms, to force patients to undergo treatment, and to punish those who infect others. Such laws are already in existance in Czechoslovakia, Denmark, Germany, Sweden and Finland.

NETHERLANDS

(From Our Regular Correspondent)

Aug. 20, 1929.

Lactic Acid Excretion in Perspiration and Urine During Athletic Activities

With the assistance of the Nederlandsche Voetbalfond, Snapper and Quinbaum have come to the following conclusions in their study of the physiology of sport activities:

After a game of football on a hot day, with a playing time of one and one-half hours, more than 60 mg. of lactic acid was excreted in the urine in 2 per cent of the players. On a cool day this figure was reached in 50 per cent of the players.

The sweat collected from the clothing on a hot day contained 468 mg. of lactic acid and 846 mg. of chlorides. The entire amount of lactic acid eliminated through the perspiration was estimated to be from 1 to 2 Gm.

After rowing a distance of 2 kilometers (1.243 miles) within from six to eight minutes, twenty-eight of thirty-nine rowers excreted more than 60 mg. of lactic acid in the urine. In a boat race over the same distance, the same output was found in twenty-four of twenty-seven rowers. In the sweat collected from their clothing an average of 97.5 mg. of lactic acid and 84 mg. of chlorides was found.

When running over distances of 3, 5, 10 and 42 kilometers (1.864, 3.107, 6.214 and 26.097 miles) within from nine minutes to two hours and a half almost no lactic acid was excreted in the urine. When physical effort is maintained over a period of more than nine minutes, a "steady state" (Hill) is established.

In swimming competitions this "steady state" does not occur even after an effort of from fifteen to twenty minutes. A large amount of lactic acid is excreted not only by swimmers within a five minute race over a distance of 400 meters (437.44 yards) but also by those covering distances of 1,500 meters (almost one mile) within from twenty to twenty-two minutes or in those playing a game of water polo.

Albuminuria was regularly present in athletes indulging in water sports but was seldom found in athletes indulging in other activities. Following hard games, glycosuria was detected in one football player and one water polo player.

Teaching of Backward Children in Holland

At the beginning of this year there were seventy-five schools for backward children, only three of which were without subsidy from the state. Besides these there are fifty-two elementary schools in Enschedé, while one school at Wageningen maintains a special class for backward pupils. Schools for backward children have been established in thirty-one different districts. Six new schools were opened during 1928. Courses in domestic science for young girls were established in fifteen schools. Of 448 classes, fifty-eight are listed as being especially adapted to extremely backward children. Of 6,815 pupils, 726 attended these special classes; 394 were boys. The day schools were attended by 235 "boarding" children. The permanent staff consists of 453 teachers, male and female.

Hospital Construction in the Tropics

Van Driel, in the *Geneeskundig Tijdschrift voor Nederlandsch Indie*, describes an improved system for the building of a hospital in the tropics. All floors should be of concrete, slightly raised in the center of the rooms, with drains placed near the walls. When the floor is being washed with a 1:400 compound solution of cresol, the waste flows out through these drains to trenches outside the building. Thus any stoppage of the drains may be immediately controlled, while the entrance of insects or a cold draught at night is prevented. Van Driel advises the use of this simple system in the construction of bath rooms, laundries and autopsy rooms. He also develops plans for the construction of a simple incinerator for burning used dressings and an apparatus for the disinfection of bedding.

Diphtheria in the Dutch East Indies

Kirschner has reported the incidence of diphtheria in Batavia, Soerbaja, in the Chinese quarter of Bandjermassin and at Bandoeng.

In the latter seaport the occurrence of fatal cases among the European population is to the extent of 3.5 per thousand as compared to 1.8 per thousand in Amsterdam. Each race is equally susceptible to infection, children up to the age of 15 being stricken mainly.

Virulent strains of diphtheria bacilli have been isolated from the pharynx of fifty-one native children, at necropsies performed within the last three years. Extensive study of forty strains has revealed their characteristics to be in no way distinguishable from the European or American strains. Diphtheria has occurred in mild form, as well as accompanied by stenosis of the larynx, and various postdiphtheritic paralyses.

BERLIN

(From Our Regular Correspondent)

Aug. 17, 1929.

The Question of Legalized Abortion

In the reichstag committee delegated to consider possible changes in the penal code of Germany, there was a prolonged discussion of the question whether, according to the new penal code, abortion should ever be permissible (that is, exempt from punishment), and, if so, under what circumstances. The paragraph pertaining thereto in the present penal code reads:

> Any woman who kills her child in utero or by abortion, or permits another person so to do, will be given a jail sentence. Any person who kills in utero or by abortion the child of another person will be punished in like manner. Any attempt to commit such an act is punishable. Any one who commits the act without the consent of the pregnant woman, or for commercial gain, will receive a penitentiary sentence. Any person who, for commercial gain, procures for a pregnant woman the means or the implement for inducing an abortion will be punished in like manner. If there are mitigating circumstances, a jail sentence of not less than three months may be substituted for a penitentiary sentence.

As a representative of social democracy, the speaker presented the reasons of the social democrats in support of striking out the foregoing paragraph in regard to abortion. An abortion should at least be exempt from punishment if it is induced by an approved physician within the first three months of pregnancy. The representative of the German national party declared that if the destruction of the lives of the unborn should be permitted, it would have suicidal consequences on the life blood and persistence of the German people. The representative of the Catholic *zentrumspartei* said that his party did not regard the penalties imposed on abortion as a panacea against the means employed for the interruption of pregnancy, which for moral, ethical and demographic reasons and considerations affecting the preservation of the state were dangerous and of momentous import, but, as hitherto, placed its chief reliance in far-reaching and widely visioned measures that are the outgrowth of researches on social welfare, housing conditions and natural increase of population. However, suitable and just penalties for abortion are indispensable for ethical, social and cultural reasons. His party still held, in principle, the view that no penal regulations should be at variance with moral laws or the natural law, but that by no means all the commands of natural law and the moral law could be brought within the scope of the penal code—only those that assured the preservation of the state as a whole and the necessary protection of citizens. The legislation recommended by the *zentrumspartei* is actuated by these fundamental conceptions as serving in a consistent and uniform manner the demands of ethics, social culture and the needs of the state. In this connection, it must be recognized that the strongest hindrances in the way of ethical, social and cultural development in association with a healthy growth of population are to be found in the triad (1) contraceptive measures, (2) means of inducing abortion, and (3) infanticide. The Catholic Church would continue, in the future,

to hold fast to its opposition, from principle, to every form of contraception and all means of inducing abortion. Control of the sexual impulse is, it contends, the only permissible method of restricting the number of births. The attitude of the church in general toward the limitation of births has been clearly and precisely set forth.

The federal minister of justice reached the following conviction: A further weakening of the penal regulations is not admissible. The child in utero is a human life. The right to destroy life is applicable only—in the interest of the common weal—to those cases in which the medical indications are imperative, which render the act ethical. If the practice of abortion were allowed to spread further, the German people would be ruined physically and morally.

Professor Kahl, the chairman of the committee and an eminent authority on criminal law, declared that he could not accept the suggestions and the proposals that would make abortion dependent solely on the will of those immediately concerned. The right of the woman to make dispositions as to her own body did not ipso facto give her the right to dispose, as she saw fit, of the new life within her body. The placing of the three months' limit after conception was an entirely arbitrary distinction. As for the so-called eugenic indications for abortion, a great many eminent medical men and eugenists are of the opinion that by no means in every instance do children inherit the diseases of their parents. Nor does Kahl recognize the "ethical indications." The plea of economic stress as a reason for abortion is well grounded in less than half the cases; by far the larger portion of cases are motivated by shame and love of ease and comfort. Kahl proposed wording as follows the preliminary paragraph of the new law:

> Abortion, within the meaning of this law, does not obtain if an approved physician interrupts a pregnancy for the reason that, according to the principles of medical science, it is necessary in order to ward off a serious menace to the life or health of the mother.

A communistic representative advocated the insertion of a paragraph declaring that abortion, if committed for reasons of financial stress, should be exempt from punishment. On the other hand, abortion that is carried out without observation of medical and hygienic requirements was to be punished by a jail sentence.

Likewise Dr. Hamel, the director of the federal health service, expressed his views from the standpoint of a disability expert as follows: Even in the most favorable cases, the female organism responds to an interruption of pregnancy with a marked physical and mental reaction. The danger of hemorrhages and infection is great; there is also a danger of adhesions and of sterility. The more frequently abortion is carried out, the greater the dangers become for the subject. For the first time, recently published statistics of the federal health service on abortions treated in the university clinics and the schools for instruction in midwifery have made it possible to express the dangers in the form of percentages. From these statistics it appears that, of the patients admitted to the foregoing institutions, 1.9 per cent died; lasting sequels remained in 1 per cent, and temporary sequels in 6.9 per cent. Within the meaning of the term as used in the women's hospitals, 89.1 per cent were dismissed as "cured." Of the patients in whom an abortion was induced in the institutions, and in whom, therefore, medical indications were the cause of the interruption of pregnancy, there was a mortality of 0.9 per cent; there were lasting sequels in 1.4 per cent and temporary sequels in 5.5 per cent. It must be admitted, therefore, that the intervention carried out in a well regulated clinic, supplied with all modern equipment, on a woman otherwise healthy, is in general associated with only slight dangers, although, in the individual case, no absolute guarantee for the favorable course of the event, especially as regards the development of an infection, can be furnished. The interventions that were not carried out in a clinic (for instance, in the rural districts) were associated, however, with great danger to the life and health of the pregnant woman, even when they were performed by a physician. Even the interventions carried out in healthy women and under favorable circumstances proved to be associated with dangers. Particularly dangerous, however, was the intervention carried out by unskilled quacks.

From a demographic point of view, Hamel pointed out that we were an "overaged" people—that is to say, the middle and the older age groups have, relatively, too large a representation, while the younger age groups are weakly represented. After suitable adjustments, we have an actual birth rate under 16 per thousand, as compared with a death rate of 20 per thousand. That signifies an annual decrease of population of a quarter of a million. If abortion were made legitimate, there would be danger that the number of marriages would decrease, as, in many instances, the unmarried father would urge the unmarried mother to consent to an abortion. In this connection, it should be emphasized that in Saxony about 70 per cent of the first born had been procreated before the parents were married. With respect to the medical indications for abortion, only the health of the pregnant woman—considered from all angles—is the decisive factor. But such a decision, on the basis of all the details that enter into the problem, is difficult to reach.

In regard to the eugenic indications for abortion, it may be said that eugenics is still too new a science for one to be able to say with a sufficient degree of certainty whether or not the offspring of a marriage will be healthy or sickly. In most cases, if a child has an hereditary taint, one can tell, it is true, from which ancestors the taint was derived, but it is impossible to establish before the birth whether or not the expected child will present an hereditary taint, and if one endeavored to do so, a great number of healthy children would be sacrificed. Even syphilitic mothers may have healthy children, for syphilis is not, properly speaking, an hereditary disease—if a new-born child is syphilitic, the disease must have been contracted in utero. Against such a transmission therapeutic remedies have been employed, of late, with good success. The law was finally revised to read as follows:

> Any woman who kills her child in utero or by abortion, or permits another person so to do, will be given a jail sentence. Any person who kills in utero or by abortion the child of another person will be punished in like manner. Any attempt to commit such an act is punishable. In particularly mild cases, the court may waive punishment. If a year has elapsed since the time a woman induced abortion in herself, or permitted another person to induce abortion in her, the misdemeanor shall no longer be punishable. Any one who commits the act described in the second sentence, without the consent of the pregnant woman, or for commercial gain, will receive a penitentiary sentence up to ten years. Any person who, for commercial gain, procures for a pregnant woman the means or implement for inducing an abortion will be punished in like manner.

The next paragraph, which regulates the interruption, by a physician, of pregnancy on the basis of medical indications, was given the following form:

> An abortion, within the meaning of this law, does not obtain if an approved physician interrupts a pregnancy for the reason that, according to the rules of medical science, it is necessary in order to ward off a danger that threatens the life or the health of the mother. An unlawful killing, within the meaning of this law, does not obtain if an approved physician, for the same reason, destroys the life of a child during the birth process.

Likewise, the following paragraph was incorporated in the law:

> Any person who, for purposes of abortion, publicly advertises, offers for sale or displays any means, implements or procedures will be given a jail sentence for a term of not more than two years, or will be subject to the imposition of a fine. The advertising or offering for sale of a means, implement or procedure to serve for interruptions of pregnancy on the basis of medical indications, provided such publicity is confined to approved physicians or to persons who carry on a legitimate trade in such means or implements, or is accomplished through medical or pharmaceutic professional journals, shall be exempt from punishment.

The foregoing drafts have been accepted, thus far, only by the reichstag committee. The final decision will lie, naturally, with the plenary assembly of the reichstag and the government.

Marriages

BERNARD BARNEY PARKER, Allerton, Iowa, to Miss Pansy Hollingsworth of Covington, Okla., at Centerville, Iowa, June 30.

RAYMOND C. WARNER, Ann Arbor, Mich., to Miss Twila Doretta Swartzfager of Sheffield, Pa., at New York, July 19.

WILLIAM B. CLARK, Atlanta, Ga., to Miss Grace Elizabeth Carr of Bainbridge, at Montreat, N. C., August 20.

CLAIR L. INGALLS, Homer, Mich., to Miss Dorothy Crane of Ida Grove, Iowa, at Nashua, Iowa, August 4.

HOWARD J. HARTMAN, Anamosa, Iowa, to Miss Helen Heineke of Springfield, Ill., August 9.

JAMES W. T. FULLER to Miss Mildred Usher, both of Mayfield, Ky., at Los Angeles, July 22.

MICHAEL WILLIAM FIEDLING, Springfield, Ill., to Miss Edith Oram of Watseka, June 29.

ROLAND T. ROHWER, Schleswig, Iowa, to Miss Ilah Dahl at Madelia, Minn., June 15.

GEORGE C. MCGINNIS to Miss Josephine Hilliard, both of Freeport, Ill., June 6.

STANLEY J. PATER, Hamilton, Ohio, to Miss Marie Geekie of St. Louis, July 23.

TOUFICK NICOLA, New York, to Miss Helen Grace Beeck, August 23.

Deaths

James Ditmars Voorhees, Santa Barbara, Calif.; Medical Department of Columbia College, New York, 1893; member of the Medical Society of the State of New York, and the American College of Surgeons; at one time instructor, tutor, lecturer, adjunct professor and associate professor of obstetrics at his alma mater; formerly on the staffs of the Sloane Maternity, New York, Southampton (N. Y.) Hospital, Greenwich (Conn.) Hospital and the Overlook Hospital, Summit, N. J.; aged 60; died, July 31, of cerebral hemorrhage.

Oscar Carl Breitenbach ✠ Waukegan, Ill.; University of Michigan Medical School, Ann Arbor, 1903; member of the American Academy of Ophthalmology and Oto-Laryngology and the American College of Surgeons; secretary of the attending staff of the Victory Memorial Hospital; member of the staff of St. Therese's Hospital; consulting oculist and aurist to the Lake County General Hospital; aged 51; died, August 14, of pneumonia.

Charles Willcox ✠ Colonel, U. S. Army, retired, Washington, D. C.; University of Virginia Department of Medicine, Charlottesville, 1889; entered the army as an assistant surgeon in 1889; was promoted through various grades to that of colonel in 1916; was retired in 1922, after thirty years' service; member of the American College of Surgeons; aged 64; died, June 28, of carcinoma of the stomach with pyloric obstruction.

Harold Capron Bailey, New York; Cornell University Medical College, New York, 1903; at one time associate professor of obstetrics and gynecology at his alma mater; member of the American College of Surgeons; regional consultant in obstetrics of the New York State Department of Health; formerly on the staffs of the Lying-in Hospital, Bellevue Hospital and the Memorial Hospital; aged 50; died, August 11.

Bertram Alexander Beale ✠ Allentown, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; member of the Medical Society of the State of New York and the American College of Surgeons; on the staff of the Allentown Hospital; aged 46; died, August 16, at the Clifton Springs (N. Y.) Sanatorium, of coronary thrombosis.

Hugh S. Mount ✠ Oregon City, Ore.; University of Oregon Medical School, Portland, 1903; member of the American College of Surgeons; past president of the Oregon State Medical Society, and the Portland Academy of Medicine; aged 53; on the staff of the Oregon City Hospital, where he died, July 9, of heart disease and nephritis.

Charles Philip Sellers ✠ Zanesville, Ohio; College of Physicians and Surgeons, Baltimore, 1893; past president of the Muskingum County Medical Society; served during the World War; aged 57; on the staff of the Bethesda Hospital, where he died, August 22, of peritonitis, following an operation for gallstones.

Frederick W. Flagge ✠ Rockaway, N. J.; Medical Department of Columbia College, New York, 1881; formerly member of the board of health of Rockaway; on the staff of the Morristown (N. J.) Memorial Hospital; aged 71; died, July 28, at the home of his daughter in Belmar, of chronic cardiac insufficiency.

John Henry Guntzer ✠ Port Chester, N. Y.; Bellevue Hospital Medical College, New York, 1889; member of the American Laryngological, Rhinological and Otological Society and the American College of Surgeons; on the staff of the United Hospital; aged 63; died, August 4, of coronary thrombosis.

Charles Henry Sutherland ✠ Janesville, Wis.; Chicago Homeopathic Medical College, 1903; Northwestern University Medical School, Chicago, 1909; formerly member of the state board of health; past president of the Rock County Medical Society; on the staff of the Mercy Hospital; aged 52; died, July 15.

Jacob Carroll Bowman ✠ Major, M. C., U. S. Army, El Paso, Texas; North Carolina Medical College, Charlotte, 1910; veteran of the Spanish-American and World wars; appointed a major in 1920; aged 46; died, August 9, at the Johns Hopkins Hospital, Baltimore, of carcinoma of the prostate.

Surse John Taylor ✠ Colon, Republic of Panama; University of Texas School of Medicine, Galveston, 1903; member of the American College of Surgeons; on the staff of the Samaritan Hospital; served during the World War; aged 50; died, August 22, at the Gorgas Hospital, Ancon, of pneumonia.

Roger Durham ✠ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American College of Surgeons; aged 51; on the staffs of the Greenpoint Hospital and the Methodist Episcopal Hospital, where he died, August 20, following an operation.

Jesse Gary Palmer, Opelika, Ala.; College of Physicians and Surgeons, Baltimore, 1884; member of the Medical Association of the State of Alabama, and the American College of Surgeons; formerly mayor; aged 67; died, in August, in a hospital at Birmingham, following an operation.

Charles Henry Yenne ✠ Washington, Ind.; Medical College of Ohio, Cincinnati, 1884; formerly member of the city council, school board and board of health; at one time on the staff of the Daviess County Hospital; aged 70; died, August 16, of heart disease.

George Gabriel Caron, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1886; member of the Michigan State Medical Society; aged 71; on the staff of the Grace Hospital, where he died, August 16, of hypertrophy of the prostate.

James Buddington Erskine, Tilton, N. H.; Medical Department of the University of the City of New York, 1885; member of the Rhode Island Medical Society and the New Hampshire Medical Society; aged 73; died, July 22, of cerebral embolism.

Israel Kleiner ✠ New Haven, Conn.; Yale University School of Medicine, New Haven, 1909; member of the American Urological Association; aged 41; on the staffs of the Grace Hospital and St. Raphael Hospital, where he died, August 6.

John W. Reid ✠ Arlington, N. J.; University of Vermont College of Medicine, Burlington, 1884; formerly on the staff of St. James Hospital, Newark; bank president; also a druggist; aged 73; died, August 1, of carcinoma of the stomach.

Noah Hayes, Lincoln, Neb.; Georgetown University School of Medicine, Washington, D. C., 1876; member of the Nebraska State Medical Association; Civil War veteran; aged 84; died, August 6, at Milford, Neb., of cerebral thrombosis.

Arthur C. Wilson, Forsyth, Mont.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1891; member of the Medical Association of Montana; aged 67; died, May 30, of injuries received when he fell down stairs.

Howard Randall Thompson, Evansville, Ind.; Indiana University School of Medicine, Indianapolis, 1913; served during the World War; aged 41; died, August 10, following an operation for appendicitis.

Carl Hayes Lund ✠ Douglas, Ariz.; University of Michigan Medical School, Ann Arbor, 1900; on the staff of the Calumet Hospital; aged 53; died suddenly, August 18, in Boston, of heart disease.

Ernest Laban Clark ✠ Media, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; aged 59; died, August 18, at the Hahnemann Hospital, Philadelphia, of carcinoma of the intestine.

Thomas Daniel Stallings, Bay Minette, Ala.; Medical College of Alabama, Mobile, 1889; member of the Medical Association of the State of Alabama; aged 65; died suddenly, July 23, of angina pectoris.

Griffin Miller Gold, Shelby, N. C.; Atlanta Medical College, 1892; formerly member of the city council; member of the board of county commissioners; aged 69; died, July 2, at the Rutherford Hospital.

Norman Perkins Wood ⊕ Northfield, Mass.; University of Vermont College of Medicine, Burlington, 1882; formerly member of the state legislature; aged 83; died, July 23, of chronic nephritis.

Isaac Hills Hazelton, Wellesley, Mass.; Harvard University Medical School, Boston, 1861; member of the Massachusetts Medical Society; aged 91; died, August 5, of arteriosclerosis.

Luther M. Leisenring ⊕ Vallejo, Calif.; University of Nebraska College of Medicine, Omaha, 1901; past president of the Solano County Medical Society; aged 54; died, July 9, at Mare Island.

Charles H. Swenk, Sunbury, Pa.; Medico-Chirurgical College of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; aged 57; died, July 7, of toxic myocarditis.

James Louis McKenzie, Cleveland, Tenn.; Chattanooga (Tenn.) Medical College, 1896; member of the Tennessee State Medical Association; aged 54; died, July 17, in a sanatorium at Nashville.

J. S. Robinson, Kingston, N. Y.; College of Physicians and Surgeons, Baltimore, 1884; member of the Medical Society of the State of New York; aged 73; died, February 10, of carcinoma.

William Bruce Loney ⊕ West Union, Ohio; Starling Medical College, Columbus, 1892; past president of the Adams County Medical Society; aged 63; died, July 26, of chronic nephritis.

Henry Hugh Clark, Pittsburgh; Bellevue Hospital Medical College, New York, 1868; member of the Medical Society of the State of Pennsylvania; aged 86; died, July 13, at St. Francis Hospital.

Charles Edwin Jones ⊕ Oak Park, Ill.; Miami Medical College, Cincinnati, 1874; Bellevue Hospital Medical College, New York, 1876; aged 78; died suddenly, July 24, of heart disease.

John W. Houser, Taylor, Pa.; Albany (N. Y.) Medical College, 1875; member of the Medical Society of the State of Pennsylvania; aged 73; died, July 8, of coronary thrombosis.

Abraham E. Lyday, Penrose, N. C.; Tennessee Medical College, Knoxville, 1891; member of the Medical Society of the State of North Carolina; aged 64; died, July 25, of paralysis.

John Mills Mayhew ⊕ Lincoln, Neb.; University of Illinois College of Medicine, Chicago, 1895; on the staff of the Lincoln General Hospital; aged 59; died, August 5, of chronic nephritis.

Emil T. Tohulka, Glasford, Ill.; St. Louis College of Physicians and Surgeons, 1906; member of the Illinois Medical Society; also a druggist; aged 57; died, July 26, of myocarditis.

Arthur J. Pitman ⊕ Manchester, N. H.; Dartmouth Medical School, Hanover, 1891; on the staff of the Hospital Notre Dame De Lourdes; aged 61; died, July 14, of angina pectoris.

Frank Calvin Wallis ⊕ Maryville, Mo.; Rush Medical College, Chicago, 1902; on the staff of St. Francis Hospital; aged 52; was found dead in bed, August 23, of heart disease.

William Frank Posey, Memphis, Tenn.; Memphis Hospital Medical College, 1910; member of the Tennessee State Medical Association; aged 46; died, August 2, of nephritis.

Waller Jameson ⊕ Roanoke, Va.; University of Virginia Department of Medicine, Charlottesville, 1903; aged 50; died, August 9, of hemiplegia, arteriosclerosis and hypertension.

Stephen W. Jones, Danville, Ill.; Medical College of Ohio, Cincinnati, 1878; formerly on the staff of the Lake View Hospital; aged 77; died, August 8, of angina pectoris.

Charles Llewellyn Bailey, Sandston, Va.; Medical College of Virginia, Richmond, 1901; aged 53; died, August 1, at St. Elizabeth's Hospital, Richmond, of coronary thrombosis.

William B. Murray, Minneapolis; Minneapolis College of Physicians and Surgeons, 1890; aged 66; was found dead, August 14, as the result of being asphyxiated by gas.

Andrew M. Brooks, Loganville, Ga.; Southern Medical College, Atlanta, 1894; aged 64; died, August 17, of bullet wounds received during an altercation with a tenant.

Stafford Walker Otton, New Market, Ont., Canada; University of Toronto Faculty of Medicine, 1913; served during the World War; aged 44; was found dead, May 19.

George McCracken Jessee, East San Diego, Calif.; Medical College of Ohio, Cincinnati, 1887; aged 69; died, in June, of injuries received when struck by an automobile.

Joshua Sylvanus Chambers, Milan, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1904; aged 63; died, August 5, at Milledgeville, of acute nephritis.

Edward J. Donnelly ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1898; veteran of the Spanish-American War; aged 56; died, July 31, of myocarditis.

John W. Howell, Cisco, Texas; Southern Medical College, Atlanta, 1883; aged 70; died, August 1, of diabetes mellitus and an overdose of insulin, self-administered.

Joseph Wakefield Myers, Elkhart, Kan.; University of Kansas School of Medicine, Kansas City, 1913; aged 45; died, in August, of carcinoma of the stomach.

David Eugene English ⊕ Orlando, Fla.; Medical Department of Columbia College, New York, 1882; aged 72; died, June 14, of cerebral hemorrhage.

Joshua Kirk, Convoy, Ohio; National Normal University College of Medicine, Lebanon, 1892; aged 76; died suddenly, August 17, of heart disease.

Newton M. Hendricks, Dayton, Ohio; University of Maryland School of Medicine, Baltimore, 1885; aged 67; died, August 19, of heart disease.

Ernest M. Manwaren, Buffalo; Eclectic Medical College of the City of New York, 1878; aged 74; died suddenly, August 20, of chronic myocarditis.

Robert Nall Leach, Thornton, Texas; University of Texas School of Medicine, Galveston, 1898; aged 59; died, May 2, of carcinoma of the liver.

John Norris Shehan ⊕ Bloomfield, Ky.; University of Louisville School of Medicine, 1887; aged 65; died, in July, at Louisville, of myocarditis.

Samuel S. Miller, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1924; aged 28; died, July 9, of septicemia.

J. Alfred Riffe ⊕ Covington, Va.; College of Physicians and Surgeons, Baltimore, 1909; aged 45; died, August 5, of heart disease.

George Annistead Noland ⊕ Ashburn, Va.; College of Physicians and Surgeons, Baltimore, 1909; aged 41; died, June 10.

Robert Horace Smith, Fort Worth, Texas; Louisville (Ky.) Medical College, 1892; aged 67; died, June 5, of angina pectoris.

Ellsworth I. McVay, Blanchester, Ohio; Starling Medical College, Columbus, 1888; aged 67; died in July, of angina pectoris.

Samuel Smith Porter, Los Angeles; Bellevue Hospital Medical College, New York, 1865; aged 89; died, July 28, of senility.

Isaac Newton Ratchford, Stockton, Calif.; Jefferson Medical College of Philadelphia, 1915; aged 37; died, January 22.

Howard Reedy, Rowland, N. C.; Medical College of the State of South Carolina, Charleston, 1884; aged 75; died, July 12.

Lucius J. Bumstead, Ontario, Calif.; Hahnemann Medical College of Philadelphia, 1881; aged 88; died, February 15.

Angus MacKinnon, Guelph, Ont., Canada; University of Toronto Faculty of Medicine, 1871; aged 82; died, June 4.

Edward B. Holden, Chicago; Rush Medical College, Chicago, 1889; aged 61; died, August 17, of angina pectoris.

Robert C. Wiley, Sparta, Ga.; University of Georgia Medical Department, Augusta, 1877; aged 75; died, July 16.

Anthony G. Sprissler, Philadelphia; Medico-Chirurgical College of Philadelphia, 1895; aged 57; died, July 14.

Elwin Milton Nichols, Barton, Vt.; Baltimore Medical College, 1895; aged 57; died, May 3, of pneumonia.

Walter Scott Bogart, Los Angeles; Eclectic Medical Institute, Cincinnati, 1903; aged 53; died, February 2.

S. Gray Mattern, Philadelphia; Jefferson Medical College of Philadelphia, 1889; aged 62; died, May 27.

Fisk Elgin, St. Louis; St. Louis Medical College, 1877; aged 79; died, August 5, of arteriosclerosis.

Almo De Monco, Los Angeles; Gross Medical College, Denver, 1890; aged 71; died, January 24.

Bureau of Investigation

IMPERIAL ACCIDENT ASSURANCE COMPANY

Physicians Are Solicited to Become "District Medical Directors"

Physicians in widely separated localities are receiving form-letters from the "Imperial Accident Assurance Company" of Chicago, soliciting the acceptance of appointments as "District Medical Directors." The letter, a mimeographed affair on the stationery of the "Aviation Department" of the company, states that the person addressed has been "highly recommended" as "capable and experienced" and, therefore, the "appointment as District Medical Director" is offered.

With the letter there is an application blank that the doctor is supposed to fill out and send to the company—with a check for $10! The blank states that this $10 will later be returned to the physician, if he desires it, "out of the surplus earnings of the company" with cumulative interest.

When the inquiries began coming into THE JOURNAL office, it was found that men rather high in the insurance world had never heard of the Imperial Accident Assurance Company. The company was not listed in the Chicago telephone directory. A letter was written to the company, asking for information regarding the responsibility of the concern. The reply was to the effect that the company is licensed by the Insurance Department and the Department of Trade and Commerce of the State of Illinois, that it specializes in accident and health insurance, writing policies in every state in the Union direct by mail. The reply stated, further, that the company also writes insurance business in Illinois through agents and was negotiating to enter all other states in the Union, except New York, Wisconsin and Iowa.

Information was not given regarding the personnel of the company but the letter was signed, "Fred H. J. Baume, Secretary-Treasurer." From other sources, it was learned that the Imperial Accident Assurance Company was incorporated under the laws of Illinois, June 27, 1929, and that it had for its president Herbert F. Wenzel, with Gustave M. Wenzel as secretary.

Readers of this department of THE JOURNAL may remember a reference to Herbert F. Wenzel in the article that appeared March 16, 1929, on the "Insurance Claim Association of America." Wenzel seems to have been the most important factor in the Insurance Claim Association, which has been soliciting "membership"—at $10 each—from the medical profession for three years past. Physicians who had sent in their $10 for such membership were written to, asking whether, in the light of subsequent events, they considered the membership worth what they paid for it. In practically every instance, they replied "No," and most of those answering the inquiry commented rather caustically on the scheme.

The Insurance Claim Association of America originally had its office at 6140 North Clark Street, Chicago; this is the address of Gustave M. Wenzel, whose name appears as secretary of the present concern—the Imperial Accident Assurance Company—in the record of incorporation. A later address for the Insurance Claim Association of America was 330 South Wells Street, Chicago. This, until a few days ago, was the address of the new Imperial Accident Assurance Company. As recently as August, this year, Herbert F. Wenzel, on the stationary of the Insurance Claim Association of America, was soliciting physicians to become members of the "Membership Committee" of that concern at a cost of $10. Today, Herbert F. Wenzel's latest concern—the Imperial Accident Assurance Company—is soliciting members of the medical profession to send in $10 as the cost of an "Associate Membership" in this company.

The Imperial Accident Assurance Company and its scheme are doubtless as strictly legal as was the Insurance Claim Association of America. Nevertheless we believe that the physician who receives a solicitation to become a "District Medical Director" for the Imperial Accident Assurance Company will show wisdom if he keeps in his pocket the $10 that he is told must accompany his acceptance of this offer.

THE NICOTINE CONTENT OF TOBACCO

Connecticut Chemists Analyze Various Brands of Ordinary Tobacco and "Denicotinized" Tobacco

A little more than a year ago—August 25, 1928—THE JOURNAL published an abstract of some work done by the Connecticut Agricultural Experiment Station on various brands of tobacco. The work covered extensive analyses made of smoking tobacco, cigars and cigarets, to determine the nicotine content of these products. Investigation was undertaken because of the appearance on the market of so-called denicotinized or denicotined pipe tobacco, cigars and cigarets, for which extreme claims were made. The investigation showed that, in general, the claim that the tobacco had been "denicotinized" was largely without foundation, for the Connecticut men found that there were, among ordinary tobaccos, brands in which the nicotine was either not in excess or was actually lower than that present in the processed tobaccos, sold under the implied claim that they were practically free from nicotine.

The Connecticut Agricultural Experiment Station has now issued another bulletin giving the results of still further analyses of tobaccos of both the processed and unprocessed types. The latest bulletin publishes the results of these later investigations, together with the results of the previous work, all of them being summarized in Bulletin 307 issued by the Station.

Eleven brands of pipe tobacco of the ordinary, or unprocessed, type have been analyzed and found to have an average total nicotine content of 2.04 per cent; four brands of so-called denicotinized pipe tobacco gave an average total nicotine content of 1.3 per cent; ten brands of ordinary unprocessed cigars, when analyzed, gave an average total nicotine content of 1.51 per cent, while seven brands of processed, or so-called denicotinized, cigars gave an average total nicotine content of 0.95 per cent. In the cigaret field forty-six analyses were made of ordinary unprocessed products, giving, as a result, an average total nicotine content of 1.77 per cent, as compared with 1.09 per cent as the total nicotine content of twelve so-called denicotinized brands.

While space will not permit reproducing the entire list of trade brands of tobacco, cigars and cigarets, we do give some of these brands:

PIPE TOBACCO
(ORDINARY—UNPROCESSED)

Blue Boar	1.45 per cent total nicotine
Craven Mixture	2.84 per cent total nicotine
Gilbert's Mixture	2.09 per cent total nicotine
Hudson's Bay Imperial Mixture	1.95 per cent total nicotine
Lucky Strike Plug	1.76 per cent total nicotine
Old English Curve Cut	1.94 per cent total nicotine
Prince Albert	1.82 per cent total nicotine
Tuxedo	2.22 per cent total nicotine

PIPE TOBACCO
(SO-CALLED DENICOTINIZED)

Dormy (Cestrada)	2.26 per cent total nicotine
Carl Henry	0.98 per cent total nicotine
O-Nic-O	0.97 per cent total nicotine
Sackett	0.98 per cent total nicotine

CIGARS
(ORDINARY—UNPROCESSED)

Judges Cave	1.80 per cent total nicotine
Knickerbocker (Osterweis)	1.76 per cent total nicotine
King Perfectos	0.91 per cent total nicotine
Partagas, Habana	1.38 per cent total nicotine
Reyes de Espana	1.16 per cent total nicotine

CIGARS
(SO-CALLED DENICOTINIZED)

Girard	1.54 per cent total nicotine
Carl Henry	0.74 per cent total nicotine
Sackett	0.67 per cent total nicotine
Sano	0.87 per cent total nicotine

CIGARETS
(ORDINARY—UNPROCESSED)

Benson and Hedges	1.26 per cent total nicotine
Camel	2.21 per cent total nicotine
Capstan Navy Cut	2.30 per cent total nicotine
Chesterfield	2.53 per cent total nicotine
Condax	1.06 per cent total nicotine
Egyptian Deitics	1.28 per cent total nicotine
Fatima	2.79 per cent total nicotine

Helmar	1.56	per cent total nicotine
Lucky Strike	1.88	per cent total nicotine
Makaroff	1.21	per cent total nicotine
Marlboro	1.94	per cent total nicotine
Mecca	2.17	per cent total nicotine
Melachrino	1.31	per cent total nicotine
Mogul	1.48	per cent total nicotine
Murad	1.52	per cent total nicotine
Nebo	1.98	per cent total nicotine
Old Gold	2.17	per cent total nicotine
Omar	1.98	per cent total nicotine
Pall Mall	1.38	per cent total nicotine
Phillip Morris	1.44	per cent total nicotine
Piedmont	3.11	per cent total nicotine
Rameses II	1.73	per cent total nicotine
Richmond Straight Cuts	2.79	per cent total nicotine
Royal Nestor	1.47	per cent total nicotine
Sweet Caporal	2.45	per cent total nicotine
Tareyton	1.75	per cent total nicotine

CIGARETS

(SO-CALLED DENICOTINIZED)

Cestrada, Virginia	2.10	per cent total nicotine
Dormy Blue Ribbon Turkish	1.19	per cent total nicotine
Carl Henry	0.95	per cent total nicotine
Lord Nestor	0.92	per cent total nicotine
O-Nic-O	0.94	per cent total nicotine
Sackett	1.03	per cent total nicotine
Sano	0.79	per cent total nicotine

From the figures just given, it can be seen that, while some of the so-called denicotinized products contain less nicotine than the ordinary unprocessed brands of the same class, they still contain material quantities of nicotine. It is to be borne in mind that the main difficulty in determining whether or not the claims made by manufacturers of so-called denicotinized tobacco products are reasonable lies in the failure to know the amount of nicotine in the various tobaccos *before* they were processed. As the Connecticut chemists said in their first report:

"No average figure for the nicotine content of tobacco in general can be given because wide differences occur due to varieties of leaf and varied conditions of culture and growth. There may be substantial differences also among the leaves of the same plant, dark (upper) leaves showing higher nicotine content than leaves lower down on the stalk (lights and seconds)."

What, however, the average tobacco user is concerned with is not so much the technical accuracy of the label as he is in knowing how the various processed tobaccos compare in their nicotine content with ordinary tobacco. The work of the Connecticut Agricultural Experiment Station permits the tobacco-using public to arrive at some worth-while conclusion on this point.

It should not be forgotten, also, that nicotine is probably not the only harmful element in tobacco smoke. As was brought out in an article published in the *British Medical Journal* of October 22, 1927, by Dr. W. E. Dixon of the Pharmacological Laboratory, Cambridge, in addition to nicotine, there are in tobacco smoke ammonia gas, pyridine (or pyridine derivatives) and carbon monoxide. Dr. Dixon's experience led him to the conclusion that moist tobacco produces much more serious effects than dry tobacco, and he even suggested that the water content of the tobacco might be a more harmful factor to the smoker than the nicotine content of the tobacco. Dr. Dixon also expressed the opinion that the condition of the tobacco and the form in which it is smoked are probably more important factors in determining the amount of nicotine that the smoker gets than is the actual nicotine present in the original tobacco.

Diagnosis and Practice.—The physician can no longer count the pulse, look at the tongue, write a prescription and be considered as practicing efficient medicine. He should not stubbornly refuse to accept the new nor should he be carried away by its supposed scientific accuracy. He should learn to employ the laboratory and special methods of investigation, realizing that they are many times indispensable aids to the solution of difficult problems. To be a good diagnostician a physician must realize not only his own limitations but also the limitations of specialism.—Waddell, J. C.: Present Day Diagnosis, *Nebraska M. J.*, September, 1929.

Correspondence

TOBACCO SMOKING

To the Editor:—Commenting on Dr. W. M. Johnston's paper on this subject in THE JOURNAL (August 31, p. 665). I think the profession and the public are indebted to him for the painstaking, temperate and judicious consideration of this much debated question. As for myself, I am ready to accept his conclusions. But there are two effects of tobacco smoking which Dr. Johnston has not considered which appear to me worth while to mention.

Being myself a smoker, I notice in my own case that I can smoke two or three pipes of tobacco after dinner without bad effects; but when I take four or five pipes, I am likely to suffer disturbance in sleep in two directions: (*a*) insomnia and (*b*) disturbing dreams. Indeed, I may suffer both of these discomforts. Secondly, I notice in my own case a growing intolerance for tobacco. In other words, I can smoke now with comfort only about half the amount of tobacco I could smoke forty years ago. I have interested myself in inquiring of friends and acquaintances regarding the effects of tobacco on themselves and I am confirmed in the view that my own experience is that of other men in the sixties who have smoked tobacco for forty years.

THEODORE DILLER, M.D., Pittsburgh.

BASIC SCIENCE LAWS

To the Editor:—An editorial comment in THE JOURNAL, August 17, remarks that "Illinois is now apparently the place of last resort for diploma venders and fraudulent practitioners who have been refused consideration in other states. Unless the present unsavory conditions in Illinois are promptly cleared up, reciprocal relations in medical licensure with other states will be seriously jeopardized. How long will Illinois continue to occupy this unenviable position?" In the medical news from Chicago, August 24, appears an item to the effect that a census of physicians and healers is to be taken. It is going to be a difficult matter to get them all registered.

If you had a basic science law like that of Minnesota and of some other states, you could tell instantly by the report from the basic science board who are entitled to practice and what form of healing they are licensed to practice. This registration has to be done every year and a list of the names of all the practitioners in the state is supplied to the county attorney and the local health officers of each town annually. If any practitioner drifts around, one can look in this book and find whether he is registered. If the name is not found, it is known he is not legalized to practice in Minnesota.

The article on "Basic Science Statutes," by Harry Eugene Kelly of Chicago (THE JOURNAL, August 17) is idealistic. If we lived in a utopia a great number of the medical as well as other laws would not be necessary; but we live under present conditions and we must meet those conditions as we find them. In Minnesota we believe that the basic science law as it is on the statute books of this state is one of the greatest protections for the general public welfare that has ever been enacted, and by that I mean the public and not any of the healing profession.

We believe that here in Minnesota any candidate who wishes to practice any form of healing and has prepared himself so that he can pass the Basic Science Board of Minnesota in anatomy, physiology, pathology, bacteriology, hygiene and chemistry will go on and finish the medical course. The short time that the basic science law has been in force practically demonstrates that our contentions are correct. There is a great deal of truth in Mr. Kelly's article and I believe special mention should be called to it again in THE JOURNAL, as every member of the American Medical Association ought to study this matter

carefully and wake up to the condition that there is such a problem facing every state in the Union. As Mr. Kelly says, it is the mercenary motive for these colleges, which can get large fees and produce healers in a short time, that is at the bottom of this evil.

If these colleges have to give courses to compete with our good medical schools, they will soon find that it is not so profitable as it has been in the past and will have their natural death in a short time. However, no law can be made retroactive, and the longer the different states refrain from putting a curb on this condition, the more of these easily gotten licenses are obtained and when once obtained they are held for life. We know that Minnesota has gotten rid of a great number of these illegal practitioners since the basic science law was enacted and unquestionably the surrounding states are reaping the benefit. LUDWIG L. SOGGE, M.D., Windom, Minn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF HYPERSENSITIVITY WITH PRURITUS

To the Editor:—A man, aged 58, a lawyer, about 10 pounds (4.5 Kg.) under normal weight, claims that he never was sick in his life but he looks older than he is. The heart and lungs and the blood pressure are normal. He is of the so-called nervous type. Mentally he is very bright and has an exceptionally good education. For ten years he has suffered from an itching all over the body after taking either a hot or a cold bath. The last two years he has suffered from this trouble even when he has changed his underclothes. The seasons, i. e., summer or winter, make no difference in the condition. The itching lasts for about six or eight hours. Lately he sometimes has even waked up at night and cannot go back to sleep on account of the itching for several hours, except when he takes two tablets of barbital and amidopyrine. The Wassermann reaction is negative. Can you help me in the diagnosis and suggest a treatment? He perspires freely but not excessively.

ALFRED E. STAPS, M.D., Chicago.

ANSWER.—From the description of this case, one cannot tell whether the patient is sensitive to heat or cold or both. This could be discovered by direct testing with a hot lamp or by the rubbing of the skin with ice, or by the effect of physical effort. It might be possible to give relief by means of epinephrine or ephedrine, and possibly also by sedatives. Persons who are sensitive to cold can sometimes be given tolerance to cold through the short application of cold baths. It sometimes helps to scratch the entire skin with a stiff brush. It is difficult to say more than this without more data.

RELATIONSHIP OF THYROID AND OVARY WITH AMENORRHEA

To the Editor:—I have a patient whose condition I am much interested in and I am anxious to solve her problem. My reason for writing is to see whether there is anything in the literature that might aid me. An unmarried woman, aged 30, presents symptoms of hyperthyroidism. There is no exophthalmos and no palpable enlargement of the gland, but the other symptoms are present, including a basal rate of + 30 and blood pressure of 180 systolic and 100 diastolic with a pulse of 140. In addition to these she has had a period of amenorrhea for one and one-half years. There has been no pelvic inflammatory condition, and the uterus is of the infantile type. She had previously had irregular periods for four or five years. I am not asking a diagnosis but whether there is anything in the literature on the relationship of a hypofunction of the ovary in a young woman giving rise to such a train of symptoms. Please omit name.

M.D., Illinois.

ANSWER.—Most books on endocrinology devote space to a consideration of the relationship between the thyroid gland and the ovaries, but there is no unanimity of opinion concerning this relationship. Some authorities state that in cases of hyperthyroidism there is usually amenorrhea, while others say there is an increase in the menstrual flow. The consensus is that in most cases of outspoken hyperthyroidism there is an amenorrhea, but the menses may be unaltered or there may even be an increased flow in some cases. When the symptoms of hyperthyroidism occur in the presence of amenorrhea, it is usually assumed that the thyroid gland is primarily responsible for all the symptoms, including the absence of the menstrual flow. Dysfunction of the ovaries is most likely the cause in some of these cases.

The following are a few special articles on the subject:

Novak, Emil: Menstruation and Its Disorders, New York, D. Appleton & Co., 1921, pp. 173, 276 and 301.
Bram, I.: Exophthalmic Goiter and Pregnancy, *Am. J. Obst. & Gynec.* **3**: 352 (April) 1922.
Aschner, B.: Beziehungen der Drüsen mit innerer Sekretion zum weiblichen Genitale, in Halban-Seitz: Biologie und Pathologie des Weibes **1**: 697, 1924.
Schroeder, R.: Die Pathologie der Menstruation, in Halban-Seitz: Biologie und Pathologie des Weibes **3**: 947, 1924.
Vignes, H.: Physiologie gynécologique et médecine des femmes, Paris, Masson & Cie, 1929, p. 189.

ANALYSIS OF POTABLE WATER

To the Editor:—Please give specific rules for taking samples of drinking water from a domestic pump that it may be analyzed for purity.

JAMES FLEMING, M.D., Cloquet, Min.

ANSWER.—The best procedure for collecting samples of drinking water for analysis is given in Standard Methods of Water Analysis, published by the American Public Health Association jointly with the American Water Works Association and the American Chemical Society in 1925. If a bacterial examination is primarily desired, the water should be pumped long enough so that it is from the well itself rather than from the supply that has been standing in the pipe. Four or eight ounce ground-glass-stoppered bottles of good quality are recommended. These bottles should have been sterilized either at dry heat for no less than one hour at 60 C. or in a steam autoclave at 50 pounds pressure for half an hour. The stopper and neck of the bottle should be covered with metal foil and the bottle wrapped in paper and placed in a suitable container for transportation. Since rapid changes may take place in the bacterial flora even at low temperatures, the sample must be examined as promptly as possible after collection. Not more than six hours should be allowed to elapse in the case of impure waters and not more than twelve hours for relatively pure waters. During this interval the temperature should be kept between 6 and 10 C.

POSSIBLE SYMPTOMS OF CHRONIC CYANIDE POISONING

To the Editor:—What are the symptoms of chronic sodium cyanide poisoning? What are the chances of a man who handles sodium cyanide bricks in industrial work daily being poisoned by them? The patient in question complains of general muscular and joint pains and generalized edema. Observations are essentially negative. Please omit name.

M.D., Illinois.

ANSWER.—Chronic poisoning from sodium cyanide is a question. If this doubtful condition exists at all, it is rare. From cyanogen chloride, chronic symptoms may arise embracing muscular weakness, inflammation of the conjunctiva and pulmonary tract, edema of the eyelids, irregular pulse, loss of weight, painful urination, mental disturbances and cutaneous manifestations. C. I. Reed (*J. Indus. Hyg.* **2**:140 [Aug.] 1920) further discusses the toxicity of cyanide compounds.

The following is taken from A Manual of Pharmacology by Torald Sollmann (p. 778):

The repeated administration of sublethal doses of cyanides was said to lead to chronic cachexia, without altering the susceptibility to the poison (Schlegel, 1892). Peripheral neuritis has been reported (Collins and Martland, 1908). However, C. I. Reed, 1920, found neither chronic symptoms nor increased susceptibility in dogs exposed daily to sublethal doses of cyanide vapor.

DERMATITIS FROM TURPENTINE OR PETROLEUM DISTILLATES

To the Editor:—A number of cases have come to my attention recently of dermatitis following the handling of turpentine or other petroleum distillates. The use of fatty substances on the hands is uneffective, apparently, owing to the fact that the fat is soluble in the distillate. If you can offer any suggestions as to how this condition can be prevented, I will appreciate it.

A. D. LAZENBY, M.D., Baltimore.

ANSWER.—In part this difficulty may be obviated by the use of fats, such as hydrous wool fat, incorporated in a bland soap, thus producing a superfatted soap. Superfatted soaps are not completely soluble in the distillates mentioned, which leads to the retention on the exposed parts of the body of a fair amount of protective fat. This procedure is widely and effectively applied in the prevention of dermatoses of the kind contemplated in this query. A number of commercial preparations of superfatted soap are available, but where large quantities are to be utilized it is far more economical and desirable to make up the superfatted soap by melting up with small quantities of water any of the well known neutral soaps, and then adding about 5 per cent of wool fat or an equivalent. The addition of small quantities of alcohol facilitates drying.

MEDICOLEGAL ASPECTS OF INHALATION OF TOXIC GASES

To the Editor:—Please send me information on results of gas exposure and its treatment. We are near the oil fields where the gas contains sulphur and other irritating and poisonous substances and many serious conditions are alleged to result from it, often involving questions of damage under the workmen's compensation law, and I need information both as to treatment and as to results from the medicolegal standpoint.

JIM CAMP, M.D., Pecos, Texas.

ANSWER.—In THE JOURNAL, July 13, page 141, appeared a query and minor note dealing to some extent with these questions. In that note it was stated that the oil fields in Texas, Mexico and California have "high sulphur crudes" and that sulphur compounds are probably the cause of certain injuries sustained by workers in these oil fields. In "Workmen's Compensation Acts in the United States, the Medical Aspects, Research Report No. 61, issued by the National Industrial Conference Board, New York," the compensability of injuries caused by certain other poisonous gases is discussed:

The inhalation of poisonous gases may develop disabilities and often cause death. Thus in New York an employee inhaled smoke and gas fumes while repairing a boiler (*Prior* v. *Oil Well Supply Co.*, 200 App. Div. 848). As a result he became disabled with bronchitis and myocarditis, from the effects of which he died. Death was held to be due to accident.

Employees in poor physical condition are more susceptible to the effects of poisonous gases and by exposure to such gases any preexisting disease in such persons is often accelerated and aggravated to a fatal termination. Thus a workman with a weak heart inhaled carbon monoxide fumes and the resultant death was compensated by the Utah commission. (*Benson* v. *Amalgamated Sugar Co.*, Utah, Industrial Commission, Report of Decisions, 1918-1920, p. 155.) Also in New Jersey, a workman, while attempting to stop the escape of phosphorus oxychloride gas from a leaking pipe, inhaled some of the fumes. (*Keller* v. *Celluloid Co.*, Weekly Underwriter, vol. 102, number 22, May 29, 1920, p. 962.) The accident "lighted up" a latent tuberculous condition, thereby causing a prolonged period of disability for which compensation was granted. Likewise an employee in Minnesota, by inhaling gas and vapors from vats in poorly ventilated premises, became sick and unable to work. (*Meisel* v. *Swift & Co.*, Minnesota, Department of Labor and Industries, Bulletin 17, p. 95.) His physical collapse was held to be compensable although he was in poor physical condition at the time.

Inhalation of poisonous gases over a long period of time is not recognized as an accident but has been compensated as an occupational disease in Massachusetts. (*In re Hurle*, 104 N. E. 336.) In this case the injury resulted in total blindness. For the same reason in New York the board refused compensation where a patrolman at a chemical plant died as a result of inhaling poisonous fumes during a period of eighteen months. (*Gray* v. *Semet Solvay Co.*, 231 N. Y. Rep. 518.) New York now includes the inhaling of certain gases under its schedule of compensable occupational diseases. Nevertheless, chlorine gas poisoning in employment not being included among the occupational diseases listed in the law, compensation was denied by the New York Supreme Court as not coming within the law. (*Trout* v. *Wickwire Spencer Steel Corp.*, 195 N. Y. Supp. 528.) In this case the court held that the common law remedy for damage exists as to cases not covered by compensation.

On the other hand, where the inhalation is sudden and unexpected as to occurrence and unusual as to quantity, the result is deemed accidental and compensable. This was the case in California where a show card writer used wood alcohol in an air brush in writing cards, and owing to a rush of work used more alcohol than usual, so much that his sight was permanently impaired. This was compensated as an accident by the California Supreme Court. (*Fidelity Casualty Co.* v. *Industrial Commission*, 171 Pacific 429.) Likewise a laborer for a gas company inhaled illuminating gas while repairing a leaking pipe and the undue strain on his heart caused death within a few hours. The New York Supreme Court affirmed an award to his dependents. (*Mahoney* v. *Troy Gas Co.—Affirmed*, 186 App. Div. 124, New York Department of Labor, Special Bulletin 97, p. 29.) Also when a miner in Illinois died as a result of inhaling bad air in a poorly ventilated part of a coal mine, compensation was allowed for the accident. (*Giccobbia* v. *Kerns-Donnewald Coal Co.*, Illinois, Industrial Board, Bulletin 1, p. 196.) The accidental inhaling of carbon monoxide was compensated as a personal injury in Michigan. (*Holnagle* v. *Lansing Fuel & Gas Co.*, 166 N. W. 843.)

In a New York case, a workman was partly overcome by coal gas and steam and the resultant congestion of his lungs was followed by tuberculosis. On his death the court affirmed an award to the widow. (*O'Dell* v. *Adirondack Electric Power Corp.*, 223 N. Y. 686.)

A fumigator in California one day inhaled more gas than he was accustomed to and died. (*Huntington* v. *Oelke and Huntington*, California, Industrial Accident Commission, Decisions, vol. 7, p. 27.) The commission awarded death benefits. The inhaling of gases and fumes from a mine explosion was held a compensable accident in Colorado. (*Comfort* v. *Lease*, Weekly Underwriter, vol. 100, number 15, April 12, 1919, p. 557.) The Indiana Supreme Court affirmed an award to the widow of a miner who died from gas and fumes inhaled in his work. (*Utilities Coal Co.* v. *Herr*, 132 N. E. 262.)

In "Industrial Health," by Kober and Hayhurst, 1924, the following discussion appears with respect to hydrogen sulphide at page 661:

Acute Poisoning.—In the less violent cases there are gastric distress, nausea, fetid eructations, irritation and inflammation of the conjunctiva; rarely, erosion of the cornea, formation of vesicles on the lips, irritating cough, headache, and a sensation of giddiness. In long-continued inhalation, convulsions and paralyses occur. In severe cases there are contraction of the pupils, slowing of the pulse, Cheyne-Stokes respiration, nystagmus, trismus and tetanus. With a very high proportion of sulphuretted hydrogen in the air a man suddenly falls, becomes unconscious and dies without convulsions (apoplectic form).

Chronic Poisoning.—Conjunctival catarrh; a sense of pressure in the head and on the chest; headache, debility, vertigo, nausea, disturbances of digestion; sallow complexion and emaciation; slowing of the pulse; tendency to the formulation of boils.

In "Legal Medicine and Toxicology," edited by Peterson, Haines and Webster, in the chapter on Gaseous Poisons by Doremus and McNally, the following appears on pages 337 and 338 with respect to hydrogen sulphide:

Symptoms.—Breathed in its pure state this gas is immediately fatal. It acts upon all animals through all tissues, especially the lungs. If somewhat diluted it produces nausea, giddiness, cold skin, labored breathing, irregular action of the heart, transient auricular fibrillation as noted in one case (Robinson, THE JOURNAL, May 20, 1916, p. 1611), pains in the stomach, and death by coma or in violent convulsions, with tetanus and even delirium. In greater dilution sleepiness will be produced, the continued respiration of the gas proving fatal and sensibility not being restored. In exceedingly dilute condition it sometimes occasions febrile symptoms somewhat resembling typhoid. Air containing 0.05 per cent was the limit that men could breathe (Lehman); from 0.02 to 0.075 per cent produced no effect on a 12½ pound (5.6 Kg.) dog; 0.15 per cent caused unconsciousness in a short time. Haldane considers 0.07 per cent sufficient to cause death if breathed for some time. Headaches and dizziness may follow after twenty-four hours. (Burchhardt: *Cor.-Bl. f. Schweiz. Aerzte* **33:** 143, 1903).) Sometimes symptoms appear after a considerable lapse of time after the gas has been breathed, and they may continue for some days. Sugar and urobilin have been found in the urine. Sodium sulphide (2 mg. per kilogram) when injected intravenously liberates hydrogen sulphide in the blood and induces hyperpnea followed by apnea vera. (Haggard, H. W.; Henderson, Yandell; and Charlton, T. J.: *Am. J. Physiol.* **61:** 289 [July] 1922. Haggard: *J. Pharmacol. & Exper. Therap.* **19:** 262, 1922.)

Chronic Poisoning.—Animals, as rabbits, exposed to the gas, or mice living in sewers, appear to become more or less habituated, and the same is true of men. Workmen in daily contact with the gas develop conjunctivitis, headache and permanent gastric disturbances. The countenance becomes pale. The skin has a tendency to become furunculous. Chemists who frequently work with hydrogen sulphide are troubled with nervous headache in later years and become exceedingly sensitive to this gas, which was at former times not unpleasant to them. Severe colic, "plomb des fosses," is brought on shortly after the inhalation of even very diluted gas—sometimes only a few whiffs. The depression of the nervous system is also distressing.

Besides its action on the nervous system, hydrogen sulphide has a specific action on the blood, changing the oxyhemoglobin to reduced hemoglobin and finally to sulphmethemoglobin (Kobert, R.: Kompendium der Toxikologie, ed. 5, 1912, p. 208) which is characterized by an absorption spectrum of two bands, one in the red midway between C and D, the other fainter, beginning at D and extending nearly half way to E. (Hoppe-Seyler: *Centralbl. f. d. med. Wissensch.*, 1863, p. 433. *Med. chem. Unters.* **1:** 151, 1866.) The blood does not show these in rapid poisoning. Haggard shows, however, that, when an atmosphere containing hydrogen sulphide is inhaled, no combination of the gas is formed with hemoglobin, nor is there any appreciable amount of sodium sulphide formed in the plasma (*J. Biol. Chem.* **49:** 519 [Dec.] 1921). Blood plasma in the presence of oxygen possesses the property of rapidly oxidizing hydrogen sulphide. When inhalation has continued for some time, the bands have been detected but must not be confounded with the same bands due to putrefactive processes (Hermann, L.: Experimentelle Toxikologie, 1874, p. 122; full discussion of symptoms and of blood spectrums, with citations of authorities). Of twenty-nine cases of poisoning with this gas reported by the chief inspector of factories and workshops for the years 1908 to 1912, only five were fatal (Kober, G. M., and Hanson, W. C.: Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., p. 47).

COMPATIBILITY OF BLOOD FOR INTRAPERITONEAL TRANSFUSION

To the Editor:—In an editorial, May 11, you discuss the method of intraperitoneal blood transfusion. I shall be glad if you will state in Queries and Minor Notes whether the compatibility of the donor's and recipient's blood must be tested beforehand as in intravenous infusions, or whether blood from any healthy donor could be used.

J. VAN SCHALKWIJK, M.D., Graaff-Reinet, Union of South Africa.

ANSWER.—The grouping of the donor's and the recipient's blood in intraperitoneal transfusions seems to be quite as important as in other methods of transfusion. All of the indications are that intraperitoneal transfusion is a true transfusion; that, is, the donor's blood gets into the recipient's circulation unchanged. The only difference is in the rate at which the two bloods mix, and accordingly any tendency to reaction is correspondingly reduced. Little direct experimental study of this point has been made, but from our knowledge of absorption of blood from the peritoneal cavity it is logical to conclude that compatability of the bloods is essential. Clinical experience bears this out. Severe reaction has been noted when proper grouping was not performed. Cross-agglutination is not as essential as in intravenous methods but should probably be employed when convenient to do.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OPHTHALMIC EXAMINERS: Philadelphia, Oct. 21, 1929. Sec., Dr. William H. Wilder, 122 South Michigan Ave., Chicago. Ill.

ARIZONA: Phoenix, Oct. 1-2, 1929. Sec., Mr. H. P. Mills, 14 North Central Ave., Phoenix, Ariz.

CALIFORNIA: Sacramento, Oct. 21-24, 1929. Sec., Dr. Charles B. Pinkham, 420 State Bldg., Sacramento, Calif.

COLORADO: Denver, Oct. 1, 1929. Sec., Dr. Wm. W. Williams, 224 State Capitol Bldg., Denver, Colo.

CONNECTICUT: New Haven (Basic Science Examination), Oct. 12, 1929. Address Connecticut State Board of Healing Arts, Box 1895 Yale Station, New Haven, Conn.

HAWAII: October, 1929. Sec., Dr. James A. Morgan, Room 48, Young Building, Honolulu, Hawaii.

IDAHO: Boise, Oct. 1, 1929. Commissioner of Law Enforcement, Hon. F. E. Lukens, State House, Boise, Idaho.

MICHIGAN: Lansing, Oct. 8-10, 1929. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit, Mich.

MINNESOTA: Minneapolis, Oct. 15-17, 1929. Sec., Dr. E. T. Sanderson, 524 Lowry Medical Arts Bldg., St. Paul, Minn.

MONTANA: Helena, Oct. 1, 1929. Sec., Dr. S. A. Cooney, Board of Medical Examiners, Power Building, Helena, Mont.

NEVADA: Carson City, Nov. 4-6, 1929. Sec., Dr. E. E. Hamer, Carson City, Nev.

NEW MEXICO: Santa Fe, Oct. 14-15, 1929. Sec., Dr. William T. Joyner, 20-21 First National Bank Bldg., Roswell, N. M.

NEW YORK: Albany, Buffalo, New York City and Syracuse, Sept. 23-26, 1929. Mr. Herbert Hamilton, Educational Bldg., Albany, N. Y.

WYOMING: Cheyenne, Oct. 7, 1929. Sec., Dr. W. H. Hassed, Cheyenne, Wyo.

Alabama July Examination

Dr. Douglas L. Cannon, chairman of the Board of Medical Examiners of Alabama, reports the written examination held at Montgomery, July 9-12, 1929. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Twenty-four candidates were examined and passed. Twenty-two physicians were licensed through reciprocity with other states and one by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1929)	76.8
Howard University School of Medicine		(1926) 84.3, (1928)	77.3, 79
Emory University School of Med		(1929) 81.6, 84.6, 85, 86.5, 88.5,	90.4
Loyola University School of Medicine		(1929)	82.3
Tulane University of Louisiana School of Medicine		(1929)	85.6, 85.9, 88.2, 88.2, 88.6, 91.2
St. Louis University School of Medicine		(1929)	82.6
Jefferson Med. Coll. of Philadelphia		(1928) 89.8, 90.9, (1929)	89.9
University of Pennsylvania College of Medicine		(1929)	90.4
University of Tennessee College of Medicine		(1929)	87.2
Vanderbilt University School of Medicine		(1928)	86

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1927)	Arkansas
Emory University School of Medicine		(1924), (1927), (1928) (1928)	Georgia Mississippi
University of Georgia School of Medicine		(1909)	Georgia
Rush Medical College		(1927)	Illinois
University of Indiana School of Medicine		(1928)	Indiana
University of Louisville School of Medicine		(1928)	Kentucky
Tulane University of Louisiana School of Medicine		(1926)	Louisiana
Washington University School of Medicine		(1926)	Tennessee
University of Maryland School of Medicine		(1928)	N. Carolina
Medical College of the State of South Carolina		(1927-2)	S. Carolina
Meharry Medical College		(1923), (1928)	Tennessee
University of Tennessee College of Medicine		(1917)	Mississippi
Vanderbilt University School of Medicine		(1927-2), (1928-2)	Tennessee
University of Texas School of Medicine		(1928)	Texas
	ENDORSEMENT OF CREDENTIALS		
Harvard University Medical School		(1926)	N. B. M. Ex.

Nevada May Examination

Dr. Edward E. Hamer, secretary and treasurer of the Nevada State Board of Medical Examiners, reports the examination held at Carson City, May 6-8, 1929. Two candidates were examined. One passed and one failed. Nine physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Washington University School of Medicine		(1928)	1

College	FAILED	Year Grad.	Number Failed
Nondescript graduate			1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College		(1909)	Nebraska
Indiana University School of Medicine		(1928)	Indiana
Drake University College of Medicine		(1913)	Iowa
University of Minnesota Medical School		(1905)	Minnesota
St. Louis University School of Medicine		(1925)	Colorado
Western Reserve University School of Medicine		(1883)	Penna.
University of Oregon School of Medicine		(1927)	Oregon
University of Pennsylvania School of Medicine		(1905)	California
Nondescript graduate			Washington

Wyoming Reciprocal Examination

Dr. W. H. Hassed, secretary, Wyoming State Board of Medical Examiners, reports 2 candidates licensed by reciprocity with other states, at the meeting held at Cheyenne, Feb. 4, 1929. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Univ. of Nebraska College of Med.	(1927) Nebraska,	(1928)	Kansas

Book Notices

LOSING LIBERTY JUDICIALLY. Prohibitory and Kindred Laws Examined. By Thomas James Norton, of the Chicago Bar. Cloth. Price, $2.50. Pp. 252. New York: Macmillan Company, 1928.

This is not a medical book. It should be read by every one, whether physician or layman, interested in the protection, through a strong and independent judiciary, of the liberties of the people, against unconstitutional encroachments by the legislative and executive departments of the government. Especially should it be read by the judiciary itself, for according to the author—and he supports his contention by citations of cases—it is through a weakening of the judiciary and a tendency on its part to adjust its decisions to the legislative will and to current phases of uplift work that danger threatens. Medical readers will be interested in the author's discussion of the decision of the Supreme Court in *Lambert* v. *Yellowley*, 272 U. S. 581, decided Nov. 29, 1926, upholding the right of Congress to limit, through the National Prohibition Act, the right of physicians to prescribe alcohol for medicinal purposes. They will be interested, too, in his discussion of the decision of the same court in *Massachusetts* v. *Mellon*, 262 U. S. 447, decided June 4, 1923, in which the court disclaimed jurisdiction to determine a question raised by the state of Massachusetts and by one of its citizens as to the right of Congress to levy taxes for the payment of federal subsidies to the states to defray the cost of infant and maternal welfare work, entrusted by the constitution in the state alone. In view of the author's thesis, it was perhaps unavoidable that some of the most important cases cited by him should be related to the traffic in alcoholic liquor and to prohibition. Some persons who might profit by reading his book may be restrained from doing so by even a suspicion that it is merely a part of the effort of the "wets" to break down the Eighteenth Amendment and the National Prohibition Act. The book is timely, however, and it is to be regretted that the author did not find it possible to cast it into a more popular mold so as to insure for it a wider reading.

AN INTRODUCTION TO THE HISTORY OF MEDICINE: With Medical Chronology, Suggestions for Study and Bibliographic Data. By Fielding H. Garrison, A.B., M.D., Lieutenant-Colonel, Medical Corps, U. S. Army. Fourth edition. Cloth. Price, $12. Pp. 996, with illustrations. Philadelphia: W. B. Saunders Company, 1929.

The last edition of this greatest one volume history of medicine in English appeared in 1922. The present edition constitutes a complete and thorough revision with the addition of much additional material, a few changed perspectives, and a marvelous concluding essay. Mention should be made also of the preface, which is an inspiration to all who are interested in the development of the teaching of medical history and in the point of view of our greatest medical historian concerning its trend. Indeed, this preface is itself a mine of information as to new books of medical history, lecture courses on the subject, and leading contributions and contributors in this field.

Between the preface and the opening essay are several pages of medical aphorisms which are texts for medical essays and a summary of the wisdom of the ages. The opening essay, on prehistoric phases of medicine, is largely new. Throughout the book new material has been added and new points of view are contributed. Vast sections in small type, thoroughly indexed, constitute a reference to practically every important discovery in medical science. The section on the twentieth century, which describes the beginning of organized preventive medicine, is a fine record of contemporary work, carrying the reader through the World War and estimating somewhat the little that medicine gained by the holocaust. The concluding essay, on cultural and social aspects of modern medicine, is a masterpiece such as only Garrison could have written. In itself it is worthy any price that might be paid for this book. The author's mind surveys the entire scheme of man's activities. Economics, art, invention, education, politics, diplomacy, quackery, legislation, communism and philosophy are touched lightly but significantly, and with immense readability.

Numerous appendixes of chronology, bibliography, teaching and similar material and two complete indexes of names and subjects add to the value of this invaluable book.

THE SACK-'EM-UP MEN. An Account of the Rise and Fall of the Modern Resurrectionists. By James Moores Ball, M.D., LL.D. Cloth. Price, 16/- net. Pp. 216, with illustrations. Edinburgh: Oliver & Boyd, 1928.

The lives of Messrs. Burke and Hare, who provided Dr. Knox with dissecting material, have been variously revealed, including volumes in several series of Notable British Trials. The cold-bloodedness of their technic for securing bodies by a quicker route than digging them up is almost unique in the history of crime. With their records as the main feature of the story, Dr. Ball gives a fine picture of anatomic study in the early part of the nineteenth century and reveals as well something of the social situation in England which could permit such a possibility to exist as long as it did. The book is well printed, exceptional for its illustrations, well documented and quite readable.

YOUR NOSE, THROAT AND EARS: THEIR HEALTH AND CARE. By L. W. Oaks, M.D., and H. G. Merrill, M.D. Cloth. Price, $1.50. Pp. 167, with illustrations. New York: D. Appleton & Company, 1929.

The authors, who are specialists in diseases of the nose and throat in Provo, Utah, have prepared here for the Appleton series of books on health subjects a simple discussion of the diseases of the ear, nose and throat, limiting their advice as to treatment to the simple home remedies that any one may and usually does apply. They give enough elementary information as to the anatomy of the conditions concerned to aid the intelligent reader to an understanding as to why he uses these measures and as to why the physician does the more technical things that he does in such cases. The work is conservative in tone and may well be recommended to any patient who wants to read about these conditions and who, the doctor thinks, ought to.

A HISTORY OF THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY. By P. M. Ashburn, Colonel, Medical Corps, U. S. Army. With an introduction by Surgeon General Merritte W. Ireland. Cloth. Price, $5. Pp. 448, with 6 illustrations. Boston: Houghton Mifflin Company, 1929.

Few of the physicians who have chosen military medicine as a career have written or can write with the facility, brevity and human understanding that mark the efforts of Colonel Ashburn. His history of the medical department of our army is therefore not a dry document overloaded with tables and statistics and charts but a free running, interesting account that will attract not only the medical soldier but the general reader. As every physician should know, military physicians have contributed greatly to the advancement of medical science. William Beaumont may be considered the patron saint of the group in America, but Reed, Carroll, Lazear, Gorgas, Craig, Ashford and many others form a notable list. The contributions of John Shaw Billings to the progress of both medicine and literature in our country cannot be estimated in monetary values. In his record of events, Colonel Ashburn gives us the background against which these men stand out in fine perspective. Beneath the current of the story runs a note of sadness at the futility of attempting to make men realize the lessons of history. From the Civil War we learned the necessity of striking early and in force as was done in the Spanish-American War, but the World War found us unprepared. From the Spanish-American War we learned the danger of epidemic intestinal disease, but in the World War respiratory diseases produced devastation.

YOUTH IN A WORLD OF MEN: THE CHILD, THE PARENT AND THE TEACHER. By Marietta Johnson. Cloth. Price, $2.50. Pp. 305. New York: John Day Company, 1929.

At a time when pedagogic methods are being subjected to new scrutiny as to their effects on the mind and body of man and as to their efficiency in securing the results desired, the evidence most needed is, of course, the case report. The author has conducted an experimental school in Alabama which has attracted the attention of educators generally. She would abolish desks from classrooms for children below 10 years of age, limit all classes to twenty children or less, abolish examinations, grades and recitations, teach by the vocational and discussion method, and have these things purposeful or playlike in character. There would be no home work. Here, obviously, is a child's paradise for instruction. This book is stimulating and written with a sincerity that is bound to command respect. The volume is full of common sense and is worthy of serious consideration.

HEALTH SCIENCE AND HEALTH EDUCATION: For College Students and Teachers in Training. By W. Alfred Buice, Bacteriology, Hygiene, Health Education, University of Oklahoma. Cloth. Price, $3. Pp. 345, with 74 illustrations. New York: John Wiley & Sons, Inc., 1929.

This textbook is divided into four parts: the common preventable diseases and how they are prevented; promotion of personal efficiency; community health, and practical exercises and experiments. It is an excellent outline for students to follow if they have good oral instruction. Its readability is not great. The work contains little that is original except the classification of the information it contains and the order in which it is offered. It is up to date and on the whole quite accurate.

DIE BIOLOGIE DER PERSON: Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch, und Prof. Dr. F. H. Lewy. Lieferung 4, Band IV: Konstitution und Arzneiwirkungen. Von Dr. E. Keeser. Konstitution und Konstellation in ihrer Bedeutung für den Missbrauch der Rauschgifte. Von Dr. E. Joël, und Dr. F. Fränkel. Versicherungslehre. Von Prof. Dr. G. Florschütz. Individuelle Besonderheiten des Körperbaus und ihre Verwertung in der Kriminalistik. Von Wirkl. Legationsrat Doktor R. Heindl. Paper. Pp. 234, with illustrations. Berlin: Urban & Schwarzenberg, 1926.

DIE BIOLOGIE DER PERSON: Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch, und Prof. F. H. Lewy. Lieferung 5, Band IV: Personelle Beurteilung nach der praktischen Lebenseignung a) Körperlich. Von Dr. med. Carl Coerper. Personelle Beurteilung nach der praktischen Lebenseignung, b) Psychologisch. Von Prof. Dr. W. Peters. Sport und Konstitution, a) Körperlich. Von Dr. med. Carl Coerper. Paper. Pp. 235-427. Berlin: Urban & Schwarzenberg, 1927.

DIE BIOLOGIE DER PERSON: Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch, und Prof. Dr. F. H. Lewy. Lieferung 10, Band IV: Sport und Konstitution, b) Psychologisch. Von Dr. H. Schulte. Einfluss des Milieus auf die Person. Von Prof. Dr. R. Michels. Die kosmischen Einflüsse auf die Person. Von Priv.-Doz. Dr. F. Giese. Paper. Pp. 429-624, with 21 illustrations. Berlin: Urban & Schwarzenberg, 1928.

DIE BIOLOGIE DER PERSON: Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch, und Prof. Dr. F. H. Lewy. Lieferung 12: Band IV: Begabung, Erziehung und Auslese. Von Prof. Dr. med. et phil. J. Baron. Das Individuum im alten und neuen Russland. Von Dr. A. S. Steinberg. Der Begriff des Individuums in der indischen Weltanschauung. Von Priv.-Doz. Dr. Betty Heimann. Individuum und Individualität in Japan. Von Prof. Dr. Sen Nagai. Individuum und Gemeinschaft im Judentum. Von Dr. S. B. Rabinkow. Paper. Pp. 625-824. Berlin: Urban & Schwarzenberg, 1928.

DIE BIOLOGIE DER PERSON: Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch, und Prof. Dr. F. H. Lewy. Lieferung 14, Band IV: Individuum und Gemeinschaft im Katholizismus. Von Prof. Dr. Linus Bopp. Mensch und Menschheit im evangelischen Christentum. Von Prof. D. Cajus Fabricus. Das Individuum im Islam. Von Prof. Dr. Hans Heinrich Schaeder. Paper. Pp. 825-986. Berlin: Urban & Schwarzenberg, 1929.

In German medicine, studies of the human constitution, of man as a whole and as a member of a race rather than as an assemblage of normal and diseased organs, have assumed

increasing importance. With the usual Teutonic thoroughness and mastery of detail for some years portions of what is apparently to be a complete assembling of human knowledge of these subjects have been issued irregularly. Each of the contributions is by an author who has given special attention to the phase of the subject considered. As indicated in the titles here listed, almost every possible aspect of the subject is to be included. In his section on life expectancy in man, Professor Ullmann provides statistics from many countries assembled according to all sorts of headings but leading to the usual conclusion that the life expectancy of women is greater than that of men for a number of reasons. The effects of sport, of drugs, of nationality, of race and of religion on the human constitution form the subjects of special essays. Each of the volumes is fully documented and there are extensive bibliographies for those who wish to investigate personally any special problem. As in all systems, the individual essays are of varying quality. The completion of the work will be awaited with interest.

A LOST COMMANDER: FLORENCE NIGHTINGALE. By Mary Raymond Shipman Andrews. Cloth. Price, $3 net. Pp. 299, with 1 illustration. Garden City: Doubleday, Doran & Company, Inc., 1929.

Biographies of the noted founder of modern nursing are of two varieties, the sentimental and the satirical. The leader of the latter class is, of course, Strachey's marvelous essay in "Four Eminent Victorians." Because of the skill of its author and her admiration for her subject, the present biography may well assume leadership of the first group mentioned. Here is a life of Florence Nightingale which may well be read by all young women embarked or about to enter on the study of nursing. Certainly they should know as much about Florence Nightingale as most physicians know about Hippocrates or even Sir William Osler. They can secure the information from the Andrews biography with pleasure and enjoy an exceptional literary style at the same time.

THE NOSE, THROAT AND EAR AND THEIR DISEASES. In Original Contributions by American and European Authors. Edited by Chevalier Jackson, M.D., Sc.D., LL.D., Professor of Bronchoscopy and Esophagoscopy in the University of Pennsylvania, and George Morrison Coates, A.B., M.D., F.A.C.S., Professor of Otology, University of Pennsylvania Graduate School of Medicine. Assisted by Chevalier L. Jackson, A.B., M.D., Assistant in Bronchoscopy and Esophagoscopy, University of Pennsylvania. Cloth. Price, $13 net. Pp. 1177, with 657 illustrations. Philadelphia: W. B. Saunders Company, 1929.

The decision has not yet been made and no doubt will never be made as to whether the student and the practitioner are better off with one volume textbooks of various specialties in which an authority dwells largely on the things with which he is especially familiar and lightly on those in which his knowledge is second hand, or with the one volume system in which a great number of authorities speak briefly on the things they know, and disagree with one another here and there where the fields overlap. The greatest defect of all systems is of course their unevenness, since authors are not equally capable in presenting their material and do not take their responsibilities with equal seriousness. Usually the capability of the editor of the system is reflected in his ability to improve the poor contributions by rewriting and reediting.

The considerations here mentioned apply definitely to the Jackson-Coates one volume system of otorhinolaryngology. Some of the contributions, notably those of Jackson himself, and the sections on anatomy of the nose and on tonsillectomy, are invaluable contributions to the subject. For these the illustrations seem to have been especially prepared and the text is brief and authoritative. The section on malingering by Jackson is, however, obviously a hasty makeshift and inserted merely for completeness, and the illustrations in the article by Shurly seem to be relics of the nineteenth century. It is astounding to find in a modern work a prescription for a tonsil spray including listerine to which bicarbonate of soda is added. Moreover, the section on Vincent's angina is weak and not at all modern in its discussion of treatment. The book fails to include any discussion of attempts to treat the tonsils or to remove them by electrical coagulation. The three pages devoted by I. Chandler Walker to hay-fever are pitifully inadequate.

In a work consisting of twelve hundred pages to which more than fifty authors have contributed, any careful reader can find errors of omission and commission. No doubt the Jackson-Coates system is freer from such errors than many another work. Indeed, the exceedingly high quality of this book as a whole emphasizes the deficiences that have been mentioned. By comparison with other textbooks of otorhinolaryngology, the one volume system here considered does not suffer. The student and the practitioner will find it a valuable work of reference and exceedingly helpful in many of the problems that confront them every day. The directions for tonsillectomy will not give them facility in the performance of that operation but will guide them into a study of the proper technic. The colored illustrations of the things to be seen by bronchoscope and esophagoscope and even tonsilloscope will be found interesting even though the practitioner may seldom come to actual use of the instruments by which these spectacles may be made visible. The vast amount of information made here available need not cause the general practitioner to despair. There are innumerable otolaryngologists who will spend hours studying the book with somewhat the same feeling that they will have. It is good to know that such a work of reference is available.

BODILY CHANGES IN PAIN, HUNGER, FEAR AND RAGE: An Account of Recent Researches into the Function of Emotional Excitement. By Walter B. Cannon, M.D., S.D., LL.D., George Higginson Professor of Physiology in Harvard University. Second edition. Cloth. Price, $3. Pp. 404, with 43 illustrations. New York: D. Appleton & Company, 1929.

The first edition of this work, when it appeared in 1915, caused a great stir among the public and the scientists. It marked the transition between the psychology of the first fifteen years of the present century and the psychology of today. It brought the glands out into popular society and initiated, although itself scientific, a flood of pseudoscientific drivel on the subject that has not ceased. Now Dr. Cannon has brought his work up to date. Not much that is new has been added in the way of knowledge to his original chapters but five new chapters are offered covering such subjects as thirst, emotional derangement of the body functions, changes in the blood associated with emotions, and two chapters on theories of emotion. Perhaps the most important suggestion to the practitioner who should be familiar with this work is the following: "The assumption that emotional agencies are causing mischief in the organism should be a last resort—an explanation which is offered only after every effort has been made to find another explanation. And even when the cause is ascribed to fear or rage or some other strong feeling, proof for that conclusion should be carefully sought both at the source of the trouble and in the effect of appropriate treatment. Nor should the possibility be overlooked that along with profound emotional disturbance there will be discovered an organic lesion. The two conditions, the altered structure of some organ and the altered function of the nervous system, may be causally related, and may have to be treated as a single disorder. Certain it is that only when they are both regarded as the perturbations of a single unity, the organism, will they be properly conceived and effectively treated."

COMPILATION OF DIETS. By the California State Dietetic Association. Second edition. Leather. Price, $5. Pp. 77. Gardena, California: Spanish American Institute Press, 1929.

This is the kind of book that every nurse, intern and dietitian likes to have available. In loose leaf form with plenty of blank pages are assembled tables of information concerning calories, iron, calcium, vitamins and other contents of various food substances. Here are menus for the fat, the lean, the nephritic and the diabetic. Here are recipes for making all the things mentioned in the menus. Here is a vast amount of information easy to get at, easy to use, and easy to supplement.

THE MODERN BABY BOOK AND CHILD DEVELOPMENT RECORD FROM BIRTH TO SIXTEEN YEARS. By John E. Anderson, Director, Institute of Child Welfare, University of Minnesota, and Florence L. Goodenough, Associate Professor, Institute of Child Welfare, University of Minnesota. Cloth. Price, $5. De luxe edition, half-leather, price, $10. Pp. 398, with illustrations. New York: W. W. Norton & Company, Inc. (The Parents' Magazine), 1929.

As more and more mothers become interested in scientific child training and child guidance, the demand for works such as this increases. Here are studies of the normal development and rearing of the child by authorities of the University of Minnesota, and, associated with a large amount of good infor-

mational material, suitable pages on which the mother may make records of the development and training of her own baby. A useful accessory is a file in which clippings, photographs, hospital charts and similar material too bulky for the book itself may be filed. The book is artistically prepared, handsomely bound, and in every sense of the word a de luxe baby book.

CRIMES OF VIOLENCE AND REVENGE. By H. Ashton-Wolfe, Interpreter at the British Civil and Criminal Courts. Cloth. Price, $2.50. Pp. 360, with illustrations. Boston: Houghton Mifflin Company, 1929.

The detective story still holds a high place with the reading public. Those who like their criminal literature more actual will find here an astounding record which makes some of the fictional works pale into insignificance. Here are accounts of wholesale murders thoughtfully planned which constitute case reports for the study of criminologists. Few of these accounts have medical interest aside from this feature, but for the physician who is somewhat of a psychologist they represent some hours of absorbing interest.

THE HISTORY OF HEMOSTASIS. By Samuel Clark Harvey, M.D., Professor of Surgery, Yale University. Cloth. Price, $1.50 net. Pp. 128, with 19 illustrations. New York: Paul B. Hoeber, Inc., 1929.

This monograph is a reprint with additions of an essay published in the Annals of Medical History. It is, as is usual with the Hoeber historical monographs, beautifully printed and handsomely illustrated. The author traces our knowledge of surgical hemostasis from the methods practiced by the ancients to the work of Paré, to the tourniquet and the ligature and the hemostat. The volume is essentially a discussion of surgical hemostasis and has little to say about such methods as involve internal administration of hemostatic substances or the application to bleeding vessels of hemostatic preparations. That, no doubt, is the great development of the future.

OLD MASTERPIECES IN SURGERY: Being a Collection of Thoughts and Observations Engendered by a Perusal of Some of the Works of Our Forbears in Surgery. By Alfred Brown, M.D. Boards. Price, $8. Pp. 263, with illustrations. Omaha: Privately Printed, 1928.

With a persistence and an erudition that can come only from true love of his material, Dr. Brown has been publishing each month for some years bibliographic material relative to surgery. In the present volume he has gathered sketches of ancient works in this field which contain biographies of ancient masters in surgery, facsimiles of their works, including title pages, illustrations and photographs, and literary notes concerning the real source books in the surgical field. The student of medical history will find the contribution delightful for its authenticity and particularly for its directness and brevity. The reproductions are good beyond imagining and their quality accounts no doubt for the price at which the work is made generally available. In any event, medical history is always a labor of love and the audience, at least in our country, pitifully small.

SCIENCE AND THE WAY TO HEALTH. By J. Mace Andress, Ph.D., Lecturer on Health Education, Boston School of Physical Education, and Maud A. Brown, M.S., Director, Bureau of Coöperative School Health Service, Extension Division, University of Kansas. Cloth. Price, $1. Pp. 367, with illustrations. Chicago: Ginn & Company, 1929.

The indefatigable Dr. Andress offers here another textbook for students of hygiene. The present book is for seventh and eighth grade students and for junior high schools. It is a sort of vade mecum since it covers history, statistics, physiology, anatomy, personal and public hygiene, morals and what not. On the whole, the advice is sound and the book is interesting. One may well question the information offered on endocrine glands and on eitquette as parts of such a work, but after all the whole field is experimental and it is perhaps better to say too much than not enough, leaving the future to decide. The book is, like most textbooks of physiology for young people, off the whole truth on such subjects as tobacco and alcohol.

TRAINING SCHOOLS FOR DELINQUENT GIRLS. By Margaret Reeves, Field Agent, Russell Sage Foundation. Cloth. Price, $3.50. Pp. 455, with illustrations. New York: Russell Sage Foundation, 1929.

This book covers the whole subject of delinquency among girls, listing the schools for delinquents. It is a comprehensive, authoritative report of a thorough survey.

Medicolegal

Sale of Spectacles by Unqualified Persons

(Kresge Co. v. Ottinger, Atty. Gen., et al.: Roschen v. Same, (U. S.), 29 Fed., (2d) 762); Roschen v. Ward, Atty. Gen. of N. Y., et al.: S. S. Kresge v. Same, (U. S.), 49 Sup. Ct. 336)

A New York law makes it unlawful to sell at retail in any store any spectacles, eye glasses or lenses for the correction of vision, unless a licensed physician or duly qualified optometrist is in charge of and in personal attendance at the booth, counter or place where such articles are sold. The Kresge Company and Roschen brought suits in the United States district court, S. D., New York, to enjoin the enforcement of the law. The Kresge Company alleged that it had fifty stores in the state of New York at which spectacles were sold over the counter; that its employees did not examine the eyes of customers, nor prescribe treatment for them, nor diagnose any eye troubles; that it offered a selection of spectacles with convex spherical lenses, which are mere magnifying glasses and do not injure the sight in any way; and that customers try glasses until they find what helps them. The company further alleged that it would be impossible to continue the sale of spectacles in its stores if it was required to employ a duly qualified optometrist or physician to be in charge of the counter at which the sales were made. Roschen made similar allegations, except that he had one instead of many stores. Affidavits by manufacturers and venders of spectacles were submitted, setting forth that between 500,000 and 600,000 pairs of spectacles with convex lenses are sold in New York annually over the counter, at from 10 cents to $1 a pair; that there are about 5,000 places in New York where spectacles are so sold; that there are only 1,850 registered optometrists in the state; that many communities in the state remote from cities have no optometrists, and that if people in rural communities cannot purchase glasses at a general store or drug store, many who have reached the age of presbyopia will have to go without anything to relieve their poor sight.

It was undisputed, the district court said, that a more certain and scientific adjustment of spectacles and a more complete correction of poor eyesight may be obtained when the lenses are prescribed and fitted by registered optometrists than when selected from a mass of different spectacles by the customer himself without aid. It was contended, however, in the first place, that the more scientific method of correction is expensive, unavailable to persons in rural districts, and in most cases unnecessary, and, in the second place, that the statute does not command the optometrist or physician who is required to be in charge of the place where the spectacles are sold to do anything whatever. With respect to the first contention, the court said it might equally have been made an objection to requiring a license to practice medicine. There are remote localities that might be better off if persons having some experience in nursing were allowed to practice medicine instead of being compelled to go without medical treatment because physicians are unavailable. Yet the legislature has regarded the temptation to use makeshift remedies and employ quacks as so strong, and the results in general as so bad, that it has prohibited the practice of medicine except by licensed physicians. With respect to the second contention, the court said, to render an optometrist available wherever eye glasses are sold is a long step toward correcting existing evils. It seemed to the court that the inevitable tendency would be for the customers to consult him, and for a reputable optometrist to furnish assistance and advice as to their needs. Moreover, the court said, if the effect of the new requirement should finally be to render the sale of a standardized product unprofitable, so that the customers in the end would not purchase it, but would have their eyes carefully tested and other glasses made according to special prescriptions, it cannot be said that the result might not on the whole be desirable. The court held that the act was reasonably calculated to promote the public health and safety and was not unconstitutional. The court could find nothing in either complaint showing an arbitrary or unconstitutional exercise of legislative power. The suits were therefore dismissed.

On appeal, the decree of the district court was affirmed by the United States supreme court (49 Sup. Ct. 336). There it was argued that although the statute required an optometrist to be in charge of the counter, it did not provide for any examination by him. The court found this argument to be without merit, because:

> When the statute requires a physician or optometrist to be in charge of the place of sale and in personal attendance at it, obviously it means in charge of it by reason of and in the exercise of his professional capacity. If we assume that an examination of the eye is not required in every case it plainly is the duty of the specialist to make up his mind whether one is necessary and, if he thinks it necessary, to make it.

Privileged Communications: Limitation of Waiver

(Chicago, R. I. & P. Ry. Co. v. Shelton (Okla.), 273 P. 988)

Ella Shelton, a passenger on a train operated by the appellant, stepped on a foreign object on the floor of the car, fell and was injured. She brought suit because of her injuries and obtained a judgment. The railroad company thereupon appealed to the supreme court of Oklahoma. As one of its grounds for appeal, the appellant complained that the trial court rejected as evidence certain disclosures that the plaintiff had made to her physician in connection with treatment by him prior to the injuries that formed the basis of the suit. The appellant's complaint, said the court, is without merit. The only expert testimony in the case was that of the physician who was summoned by the railroad company when the accident occurred and who treated the plaintiff at that time. The testimony of the plaintiff's family physician, proffered by the defendant in the course of the trial, so far as it related to the condition, extent and duration of the plaintiff's injuries, was identical with testimony previously introduced by the plaintiff herself, by which she was bound. There could be no error, therefore, in rejecting that portion of the testimony of the defendant's proffered witness that related to the injuries. And that portion of the proposed testimony of that witness that related to information gained by him in the course of his professional treatment of the plaintiff before the injury occurred was inadmissible. It was true that the plaintiff offered herself as a witness, but she gave no voluntary testimony concerning her health prior to the injury. Her only testimony in that connection was in the course of cross-examination, when she testified that she had had a miscarriage seven or eight years before the injury occurred, but testimony given on cross-examination is not voluntary testimony. The plaintiff testified to no fact justifying or authorizing impeachment, and the only purpose of introducing the evidence of her family physician was impeachment; her testimony was favorable to the defendant, and there would be no cause for impeachment by him. The supreme court affirmed the judgment of the court below.

Damages for a Roentgen Burn

(Legler v. Muscatine Clinic et al. (Iowa), 223 N. W. 405)

The plaintiff was burned in the course of treatment with roentgen rays. A verdict and judgment were given in his favor for $20,000. The defendant appealed to the supreme court of Iowa, which affirmed the judgment.

After the removal of one of the plaintiff's testicles because of an adenocarcinoma or embryonic carcinoma of the seminal tubule, a primary carcinoma or cancer of the testicle, roentgen treatments were administered to prevent recurrence. When the fourth or last treatment, Jan. 25, 1927, was administered, a filter was not put in the machine. Its omission was discovered immediately after the treatment, and the patient was informed that he would have a burn. Everything possible was done to counteract the effect of the treatment thus improperly administered, but a semielliptic burn developed on the left side of the patient's spine, approximately 10 inches long and 4½ inches wide. Various operations were performed to cure it, but at the time of the trial, Feb. 29, 1928, a part of the burned area remained unhealed and expert testimony showed that it was uncertain how long it would remain so. The plaintiff, a farmer and stock raiser, was 42 years old, with an expectancy of life, according to the life tables, of 26 years. Some of the experts testified, however, that there was likely to be a recurrence of the cancer within from five to seven years and that a recurrence of cancer of the type from which the plaintiff had suffered is usually fatal. At the time of the trial the plaintiff could bend his body at the hips about 15 degrees from the perpendicular. His inefficiency resulting from the burn was variously estimated at from 30 per cent to 50 per cent. Even if the wound should heal there would be marked permanent disability during the remainder of the plaintiff's life. He had suffered excruciating pain and would continue to do so for some time. He had expended for medical treatment, nurses' hire and hospital bills approximately $3,000. Prior to his injury, his time in connection with his business was estimated, without dispute, to be worth $2,500 a year. From all the facts and circumstances, the supreme court did not feel that the amount of the verdict, $20,000, was excessive. There was no error in the record prejudicial to the appellant. The judgment of the court below was therefore affirmed.

Rank Odor as Evidence of Unfit Food

(Elliott v. State (Texas), 12 S. W. (2d) 575)

The appellant was convicted in the Grayson county court of violating the pure food law of Texas. He appealed to the court of criminal appeals, where the conviction was set aside.

The pure food law forbids the sale of food which is adulterated or misbranded and provides that food is adulterated "if it consists in whole or in part of . . . any portion of an animal or vegetable unfit for food." The state contended that meat sold by the appellant gave off, when cooked, a rank odor, and for that reason alone was unfit for food. There was no claim that the meat was decayed or diseased. It was undeniably from a freshly slaughtered healthy hog. To affirm a verdict of guilt in the case, the court said, thereby judicially declaring that in the state of Texas food might be considered as adulterated, however healthful otherwise, merely because it had a rank odor, would be going too far. The court was not unmindful that many articles of wholesome food do not bear the odor of attar of roses. If such a rule were laid down, the court said, what would become of the succulent onion, the appetizing limburger, the tasty garlic and the luscious collard? Such an interpretation would be manifestly unsound.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Atlantic City, N. J., October 21-25. Dr. William P. Wherry, Medical Arts Building, Omaha, Executive Secretary.

American Association of Railway Surgeons, Chicago, November 6-8. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American Child Health Association, Minneapolis, September 30-October 4. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American College of Physical Therapy, Chicago, November 4-7. Dr. R. W. Fouts, Medical Arts Bldg., Omaha, Secretary.

American College of Surgeons, Chicago, October 14-18. Dr. F. H. Martin, 40 East Erie Street, Chicago, Director-General.

American Public Health Association, Minneapolis, September 30-October 4. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Sec'y.

Associated Anesthetists of the United States and Canada, Chicago, October 14-18. Dr. F. H. McMechan, 770 West Lake Road, Avon Lake, Ohio, Secretary.

Association of American Medical Colleges, New York, Nov. 7-9. Dr. Fred C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Association of Military Surgeons of the United States, Denver, September 26-28. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Central States Pediatric Society, Milwaukee, September 27-28. Dr. A. H. Parmelee, 310 South Michigan Blvd., Chicago, Secretary.

Delaware, Medical Society of, Farnhurst, October 8-10. Dr. James E. Brayshaw, Medical Arts Building, Wilmington, Secretary.

Indiana State Medical Association, Evansville, September 25-27. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Interstate Postgraduate Medical Association of North America, Detroit, October 21-25. Dr. Edwin Henes, Jr., 445 Milwaukee Street, Milwaukee, Executive Secretary.

Kentucky State Medical Association, Louisville, October 21-24. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Nevada State Medical Association, Elko, September 27-28. Dr. H. J. Brown, Box 688, Reno, Secretary.

Pennsylvania, Medical Society of the State of, Erie, September 30-October 3. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Vermont State Medical Society, Bellows Falls, October 10-11. Dr. William G. Ricker, 29 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Charlottesville, October 22-24. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics & Gynecology, St. Louis

18: 165-302 (Aug.) 1929

Spinal Anesthesia in Obstetrics and Gynecology. G. P. Pitkin, Teaneck, N. J.—p. 165.
Three Phases of Gynecologic Plastic Surgery. R. T. Frank, New York.—p. 172.
*Outcome of 625 Pregnancies in Women Subjected to Pelvic Radium or Roentgen Irradiation. D. P. Murphy, Philadelphia.—p. 179.
Key Fibroid. E. Ries, Chicago.—p. 188.
*Microcephalic Idiocy Following Radium Therapy for Uterine Cancer During Pregnancy. L. Goldstein and D. P. Murphy, Philadelphia.—p. 189.
*Leukorrhea: Trichomonas Vaginalis. C. H. Davis, Milwaukee—p. 196.
Examination of Blood in New-Born: Treatment for Hemorrhage. W. L. Carr, New York.—p. 203.
*Report of Investigations to Determine Therapeutic Dose of Dextrose (*d*-Glucose) Administered Intravenously. P. Titus and H. D. Lightbody, Pittsburgh.—p. 208.
*Incidence of Syphilis Among Pregnant Negro Women. C. L. Wilson, Chicago.—p. 215.
*Metaphen in Treatment of Puerperal Septicemia and Other Blood Stream Infections. J. B. Bernstine, Philadelphia.—p. 220.
*Diathermy as Adjunct in Treatment of Pelvic Inflammatory Disease. L. C. Scheffey and W. H. Schmidt, Philadelphia.—p. 230.
Study of Fifty Consecutive Ectopic Pregnancies. R. M. Grier, Evanston, Ill.—p. 240.
Puerperal Morbidity Without Disinfection of Vagina: 2,016 Cases. C. A. Gordon, New York.—p. 245.
Treatment of Endocervicitis with Actual Cautery Electrocoagulation. W. F. Harriman, Philadelphia.—p. 250.
Value of Roentgen Ray as Aid in Management of Polyhydramnios: Case. A. C. Beck, New York.—p. 257.
Uterocystography. E. C. Steinharter and S. Brown, Cincinnati.—p. 259.
New Uterine Cannula, Gas-Tight, Oil-Tight and Self-Retaining. S. R. Meaker, Boston.—p. 261.
Pregnancy in Uterus Didelphys: Case. H. M. Mills and H. Strauss, New York.—p. 263.
Terata Katadidyma: Case. C. E. Updegraff, Akron, Ohio.—p. 265.
Suprapubic Transvesical Operation for Vesicovaginal Fistula. N. P. Sears, Syracuse, N. Y.—p. 267.
Ruptured Uterus Following Classic Cesarean Section: Case. E. L. Cornell, Chicago.—p. 274.
Spontaneous Severance of Umbilical Cord. L. H. Douglass, Baltimore.—p. 275.
Double Renal Decapsulation for Puerperal Anuria. I. B. Krellenstein, New York.—p. 277.
New Pelvimeter. H. Stuckert, Philadelphia.—p. 278.

Outcome of Pregnancies in Women Subjected to Pelvic Radium.—Six hundred and twenty-five pregnancies in women subjected to pelvic irradiation treatment have been studied by Murphy to ascertain the influence of the irradiation on the length of pregnancy and on the health and development of the subsequent children. Irradiation before conception may be followed by the birth of unhealthy or defective children. It cannot definitely be stated that such maternal treatment has a detrimental influence on the health of subsequent children. Irradiation of the pregnant woman is extremely likely to be followed by the birth of seriously defective offspring. The frequency of these defects and their conformity to a type, of which microcephaly is the most common, strongly suggest that they are the result of irradiation received by the embryos in utero. It is believed that diagnostic curettage should always precede pelvic radiotherapy in order to avoid possible irradiation of a growing embryo. The conclusion is reached that the pregnant uterus should never be subjected to radiotherapeutic exposures. It is further deemed advisable that, should a growing embryo unwittingly be irradiated and its existence later be discovered, such a pregnancy should be terminated at the earliest possible moment.

Microcephalic Idiocy Following Radium Therapy for Uterine Cancer During Pregnancy.—Basing their views on the frequency of microcephalic idiocy after postconception pelvic irradiation and on the condition of the child described in this report, Goldstein and Murphy are of the opinion that no pregnancy should be allowed to continue to term when such radium or roentgen therapy has been employed. The value of deep radium therapy for cancer of the cervix in a young pregnant woman is shown in this case report. Complete cure resulted from the employment of 6,480 milligram-hours of radium given in two treatments. Another interesting feature of this case is that an artificial menopause was not produced by the large amount of irradiation employed. The patient has had regular menses from 1917 (after eight months of amenorrhea) until her normal menopause, at the age of 40 years, in June, 1927, or for a period of eleven years. The circumstances surrounding the case of microcephalic idiocy described here strongly suggest the conclusion that cerebral arrest was due to the fetal irradiation.

Leukorrhea; Trichomonas Vaginalis.—Davis says that no type of treatment thus far tried will cure every case of *Trichomonas vaginalis* vaginitis. It is important to avoid the use of drugs that will injure the vaginal mucosa. Treatments should be administered at least four times each week and continued until the vaginal mucosa has healed and pus cells and parasites have disappeared. Daily treatments are advisable in some cases. A Miller speculum of proper size is inserted and the vagina dried with cotton, cleansed with 1 per cent compound solution of cresol and again dried. The entire vaginal mucosa is painted with 5 per cent mercurochrome-220 soluble. Glycerin or sulphonated bitumen, 5 per cent, in glycerin and a tampon are inserted. When a douche is advised, either 1 per cent lactic acid or compound solution of cresol may be used. It would appear that lactic acid has its chief value after the vaginitis has entirely disappeared. A drying powder is at times effective. In view of the possibility of an associated intestinal infection, the patient should cleanse the external genitalia and anus with liquid soap and water morning and night during treatment and before coitus and after defecation for an indefinite period. It is advisable to examine the vaginal secretions for several months immediately after menstruation.

Investigations to Determine Therapeutic Dose of Dextrose Administered Intravenously.—Investigations made by Titus and Lightbody apparently established the therapeutic intravenous dose of dextrose at 75 Gm. for an average sized adult. Less than this will not give the maximum therapeutic effect, and more than this is likely to produce a reaction from overstimulation of the insulin-producing activity of the patient's pancreas. Single intravenous doses of dextrose repeated from one to three times daily as necessary are preferable to prolonged injections for the same reason of excessive endogenous production of insulin. By averaging in one's adult patients such variable factors as body weight, individual differences in pancreatic activity, variations in nourishment and previous medication, it is possible to make a broad statement as to the average routine administration of dextrose. The most beneficial results seem to follow the intravenous administration to an adult of 75 Gm. of dextrose in a volume of 300 cc. (25 per cent) during a period of from ninety to a hundred minutes. It is suggested that the amount of dextrose thus administered to a half-grown child should be one half and to an infant one fourth of the adult dose, but that the same total length of time (from ninety to a hundred minutes) should be consumed for these injections. Other concentrations of solution or lesser amounts may be used according to individual requirements, but the quantities mentioned represent safe and adequate average standards of dextrose dosage.

Incidence of Syphilis Among Pregnant Negro Women.—Out of 3,631 cases tested by Wilson there resulted an incidence of 7.48 per cent. In a large number of cases there is little difference between syphilitic and nonsyphilitic women as to the final outcome of the pregnancy.

Metaphen in Treatment of Puerperal Septicemia.—In sixteen cases of blood stream infection reported by Bernstine, injections of metaphen had a beneficial effect. In the doses recommended (10 cc. of a 1:1,000 solution), metaphen is of low toxicity. No untoward reactions have been observed following its intravenous administration. In many cases of puerperal septicemia, metaphen brings high temperature, pulse rate

and respiration down to normal. Its intravenous administration is recommended as a safe and potent measure in infections of the blood stream.

Diathermy as Adjunct in Treatment of Pelvic Inflammatory Disease.—Scheffey and Schmidt believe that whatever good diathermy accomplishes is due to the increase in circulation brought about by the local application of heat, rather than from any heat generated in the diseased tissues themselves, and surely not from any destruction of bacteria by heat. They do not agree with some observers that it should be employed in all cases of inflammatory disease irrespective of the severity of the infection and the degree of pelvic disease. Its use is contraindicated in the presence of complicating pelvic conditions as myoma uteri and ovarian cysts or tumors, nor should it be employed during menstruation or in the presence of profuse bleeding of inflammatory origin. They did not find, as did some observers, that pain was almost instantly relieved by its use. Sometimes it was increased for a time at least, and, if markedly so, the applications were discontinued. Less technical difficulty was noted, however, in the operative cases preceded by diathermy, as evidenced by decreased density of adhesions and their more ready separation. They were better satisfied with the use of the abdominosacral method than with the abdominovaginal, the application being simpler, and because of their belief that increased circulation is the principal factor in the benefit derived, rather than increased temperature in the tissues themselves which one might more likely expect a vaginal electrode to produce.

American J. Psychiatry, Baltimore

9: 1-229 (July) 1929

Need of Consolidation of Psychiatric Thought by Broad Program of Research. S. T. Orton, New York.—p. 1.
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American J. Surgery, New York

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*Oxygen Treatment of Complications Incident to Goiter. S. F. Haines and W. M. Boothby, Rochester, Minn.—p. 174.
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*Etiology of Exophthalmic Goiter. E. P. Sloan, Bloomington, Ill.—p. 194.
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Colofixation in "Chronic Appendicitis." E. P. Quain, Bismarck, N. D. —p. 259.
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Teratoma Testis with Metastases Controlled by Irradiation. A. L. Dean, Jr., New York.—p. 276.
Leiomyoma of Urinary Bladder. L. P. Wershub, New York.—p. 280.
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Carcinoma of Prostate Controlled Six Years by Interstitial Irradiation. B. S. Barringer, New York.—p. 284.
Inoperable Infiltrating Carcinoma of Bladder: Two Cases. B. S. Barringer, New York.—p. 284.

Oxygen Treatment of Complications Incident to Goiter.—A hundred and forty-three patients suffering from goiter were treated in the oxygen chamber in the last three years at the Mayo Clinic. Three of these patients were admitted twice to the oxygen chamber, thus making 146 admissions. Of the 143 patients, 104 lived and thirty-nine died; the deaths include nearly all the postoperative deaths in the goiter service. Partial thyroidectomy had been performed on 126 of the patients. Tracheotomy for suppurative thyroiditis with marked respiratory obstruction had been performed on one patient; femoral embolectomy had been performed on a patient with hyperfunctioning adenomatous goiter, and fifteen patients were not treated surgically. Of the 104 patients who lived, ninety-one (88 per cent) were considered benefited by oxygen treatment. None of eight patients admitted to the oxygen chamber directly from the operating room to prevent an anticipated reaction were listed as improved. Aside from the fall in temperature following admission, the basis for the estimate of improvement rests on the clinical evidence presented in the individual case. One hundred and thirty-one of the patients had fever on admission to the chamber, and of these, 108 (82 per cent) showed the characteristic drop in temperature; the average drop for the group was 2.2 degrees in the first twelve hours in the chamber. Of the 104 living patients, ninety-three (89 per cent) experienced a rise in temperature after removal from the chamber; the rise averaged 1.5 degrees in the first twelve hours. Haines and Boothby are convinced that in general these changes in temperature are the result of the influence of the oxygen treatment. In ninety-six of the 146 admissions for treatment, definite cyanosis was present. Eighty-five of the cyanosed patients were considered benefited, and eleven were not benefited. Of the patients not cyanosed, twenty-eight appeared to be benefited and twenty-two were not benefited. Most of the patients who were not cyanosed and were improved by oxygen treatment had pulmonary edema, pneumonia or respiratory obstruction, all conditions in which further progress of the disease would presumably have produced anoxemia. Twenty-nine patients in the series were treated in oxygen tents. The results of treatment in the oxygen tent were not so strikingly good as in the oxygen chamber. Of the fifteen patients who had not had previous surgical treatment, ten suffered from hyperthyroidism and severe cardiac decompensation, three from hyperthyroidism and pneumonia, one from exophthalmic goiter with acute laryngitis, accompanied by edema and respiratory obstruction, and one was in the gastro-intestinal crisis of exophthalmic goiter. Two of the three patients with pneumonia were benefited. Only four of the ten patients with cardiac decompensation were benefited. Other treatment was instituted simultaneously in all cases of cardiac decompensation, so that the effect of oxygen itself cannot be definitely determined. In this group, cyanosis was not so common as in the other cases and the results for the group are not strikingly good, although a few were apparently improved.

Anesthetics in Relation to Goiter.—McKesson summarizes his experiences as follows: Light anesthesia properly maintained is needed in toxic cases. Nitrous oxide-oxygen anesthesia is best suited for these cases since nausea and vomiting do not result from light anesthesia as in other anesthetics, and the proper plane of anesthesia is always obtainable. The anesthetic should be checked by means of blood pressure determinations to detect depression as a result of improper narcosis. Narcosis under pressure when respiratory obstruction is encountered is conveniently applied and is efficient in relieving it during operation, recourse to tracheotomy being avoided.

Etiology of Exophthalmic Goiter.—Sloan's hypothesis is as follows: Secretion of colloid occurs in the interstitial cells. By rupture of the cell membrane, the colloid is released and

finds its way into the acini. The cell finally becomes one of the cells lining the acini, is exfoliated and disintegrates, releasing into the acini the unknown "element x" of thyroxin. The "element x" contained in the nucleus and the cell membrane, having a great affinity for iodine, combines with the iodine in the colloid, producing wholesome thyroxin, which finds its way into the general circulation by the way of both the capillaries and the lymphatics. If iodine is not present in the colloid in the acini, thyroxin is not elaborated and the "element x" enters the circulation as a toxic substance. When infection attacks the gland, the bountiful blood supply usually prevents abscess formation. But the inflammatory reaction or thyroiditis produces changes in the secreting cells that checks or destroys the secretion of colloid by rupture of the cell membrane; namely, by merocrine secretion. The cell membrane does not rupture and release colloid into the follicle. No excess of iodized colloid is present in the follicle when the cell containing some of the "element x" in its nucleus and cell membrane reaches the follicle and disintegrates. No iodine being present in the acini, the "element x" enters the circulation as a toxic product. If the blood stream is iodized, the "element x," having a great affinity for iodine, combines with the iodine in the blood stream and wholesome thyroxin results.

Annals of Surgery, Philadelphia

90: 161-320 (Aug.) 1929

*Evaluation of Blood Clotting Factors in Surgical Diseases. F. W. Bancroft, I. N. Kugelmass and M. Stanley-Brown, New York.—p. 161.
*Hyperglycemia Following Head Injuries. H. E. Mock and G. de Takáts, Chicago.—p. 190.
Part Which Iodine Has Played in Treatment of Patients with Exophthalmic Goiter. W. E. Sistrunk, Rochester, Minn.—p. 202.
*Treatment of Abdominal Injuries in Children: Fifty-Nine Cases. F. Beekman, New York.—p. 206.
*Treatment of Persistent Bronchial Fistula. E. H. Pool and J. H. Garlock, New York.—p. 213.
Subphrenic Abscess. T. H. Russell, New York.—p. 238.
*Gonorrheal Infection of Abdominal Wounds Following Laparotomy. G. M. Lawson and R. H. Smithwick, Boston.—p. 243.
Lymphosarcoma of Gastro-Intestinal Tract: Thirteen Cases. W. M. Weeden, New York.—p. 247.
*Postoperative Complications of Cholecystectomy. R. D. McClure, Detroit. p. 253.
Carcinoid Tumors of Appendix. C. L. Wilmoth, Baltimore.—p. 261.
Routine Removal of Appendix in Right Inguinal Herniorrhaphy. K. P. A. Taylor, Quirigua, Guatemala.—p. 266.
*Emulsified Campiodol as Pyelographic Medium. M. A. Glaser and A. A. Kutzmann, Los Angeles.—p. 270.

Evaluation of Blood Clotting Factors in Surgical Diseases.—Studies were undertaken by Bancroft et al. to determine the reaction of the blood clotting factors to surgical procedures and to surgical diseases such as thrombosis and embolism and certain bleeding diseases. The methods of determination of the substances involved in blood coagulation are presented; i. e., prothrombin, fibrinogen, antithrombin, platelets, and the degree of platelet lysis. Eleven cases of proved thrombosis, phlebitis or embolism have been studied. All of these cases presented a high clotting index and a low antithrombin. In addition, a small percentage of postoperative cases in which thrombosis or embolism was not proved, showed high clotting factors. Animal experiments made by the authors have shown an increase in the clotting factors following postoperative infection and gangrene, and a lesser increase following ether anesthesia. Pretonsillectomy studies of the clotting function are given for three groups of cases: (*a*) with deficient clotting function; (*b*) with normal clotting function, previously suspected as bleeders; (*c*) nutritional bleeders treated by diet. The prenatal prevention of potential hemorrhagic disease of the new-born is given with a case report of a woman who gave birth to four previous infants with true melena neonatorum. The dietary treatment of hemorrhagic diseases is presented. Analyses of diets are given for increasing clotting function (clotting diets) and for decreasing clotting function (bleeding diets). Animal experiments show that the tendencies to bleed or clot are definitely influenced by diet. Case reports are presented with results obtained on bleeding and clotting diets. These studies are being continued.

Hyperglycemia Following Head Injuries.—Mock and de Takáts assert that head injuries of sufficient severity to cause loss of consciousness result constantly in hyperglycemia, which subsides within the first day or a few days. This has been found in animal experiments and in a small number of clinical cases. Section of the splanchnic nerves in the dog abolished this hyperglycemia. The sympathetic discharge originating in the higher centers of sugar regulation is unable to reach the liver and mobilize glycogen. This state of sympathicotonia manifesting itself in increased epinephrine susceptibility was tested in patients shortly after and many months following the head injury. While the immediate response was stronger than in controls, the late curves were mostly negative with the exception of those who had marked residual injury. A few patients were found whose epinephrine curve was not abnormally high but showed a delay in returning to normal. These patients were all above 40 and may have a mild pancreatic damage. This is not uncommon at this age and deserves careful consideration. Hence the possibility of upsetting an already weakened pancreatic activity by a sudden sympathetic discharge, followed by a marked rise in blood sugar, must be considered.

Treatment of Abdominal Injuries in Children.—In the series of fifty-nine cases analyzed by Beekman there were ten operations; in four of them the indications were definite, one for ruptured spleen and three for laceration of the intestinal tract; in two of these the patients' lives were saved. In the remaining six cases the operations were merely exploratory in character. One of these patients had a ruptured lung and died. Another had an injured kidney with a large retroperitoneal hemorrhage and died. The four remaining children had retroperitoneal hemorrhage of unknown origin; they all recovered in spite of the added shock from the operation. Of the ten operative cases, in only four was the procedure warranted. It is apparent that it is not essential to submit all children with signs of abdominal injury to operation. In a small proportion of the cases (less than 7 per cent) operative intervention is necessary to save life; in a larger group it is not required and will in many cases precipitate death by the added shock or hemorrhage. It is evident that to carry out the proper treatment in an individual case the surgeon must know the condition he is dealing with. Diagnosis by operative exploration is not justifiable as the lives of many children will be further jeopardized. Intelligent conservatism in the treatment of intra-abdominal injuries of childhood will save the greatest number of lives.

Treatment of Persistent Bronchial Fistula.—The operation proposed by Pool and Garlock consists in the exposure of the fistula through an adequate incision without disturbing the relation of the lung to the chest wall, the fashioning of a pedicled muscle flap from neighboring muscle tissue, the insertion of the end of this flap into the bronchus as one inserts a cork into the neck of a bottle, the suture of the sides of the muscle flap to the tissues in the immediate neighborhood to prevent dislodgment, and, finally, closure of the operative wound. This procedure has been carried out in three cases, which illustrate different types in which the method may be employed.

Gonorrheal Infection of Abdominal Wounds Following Laparotomy.—Two cases of acute salpingitis simulating appendicitis are reported by Lawson and Smithwick. The unusual feature in both cases was a secondary infection of the laparotomy wound with the gonococcus. Fever and visible wound infection were present four and five days postoperatively. In one of these cases the diagnosis of salpingitis was obvious; in the second it was made only by bacteriologic studies. Treatment of these two wounds with surgical solution of chlorinated soda and their further treatment with 10 per cent mild silver protein rapidly freed the lesions of gonococci.

Postoperative Complications of Cholecystectomy.—Among 700 operations reviewed by McClure there were 102 with complications, the most frequent and least serious being wound infection, which occurred in 3.5 per cent of the cases. There were no deaths. Pneumonia in twelve cases, or 1.7 per cent, with nine deaths, makes pneumonia the most serious of the complications. Myocardial failure ranks second, with nine deaths. Pulmonary embolus was recognized in six cases, with five deaths. In not one case was shock the cause of death.

Emulsified Campiodol as Pyelographic Medium.—Emulsified campiodol has been used successfully by Glaser and Kutzmann as a pyelographic medium in twenty-five cases. It possesses such advantages as good shadow casting, low toxicity,

good miscibility, low viscosity and, especially, nonirritability, which justifies its further use, and the authors hope to report additional experiences. Emulsified campiodol is a stable emulsion of iodized rape-seed oil, composed of iodized rape-seed oil, acacia solution and distilled water. It contains approximately 43 per cent of elemental iodine.

Archives of Dermat. & Syphilology, Chicago

20: 151-276 (Aug.) 1929

Allergy in Skin Diseases. W. J. Highman, New York.—p. 151.
*Absorption of Sulphur Compounds During Treatment by Sulphur Baths. A. E. Osterberg, M. W. Rubenstein and W. H. Goeckerman, Rochester, Minn.—p. 158.
Controversy Over Itch Mite. D. W. Montgomery, San Francisco.—p. 167.
Lecithin Studies in Syphilis. I. Rosen and F. Krasnow, New York. —p. 171.
*Massive Weekly Inunctions with Mercury. H. N. Cole, J. E. Rauschkolb, N. E. Schreiber and T. Sollmann, Cleveland.—p. 176.
*Use of Gentian Violet in Erosio Interdigitalis Saccharomycetica. T. Cornbleet, Chicago.—p. 184.
Statistics of Ten Most Common Skin Diseases. H. Goodman, New York. —p. 186.
Toxin Production by Spirochaeta Pallida. J. A. Kolmer, Philadelphia. —p. 189.
Dermatitis Caused by Larvae of Ancylostoma Caninum. G. F. White, Washington, D. C., and W. E. Dove, Dallas, Texas.—p. 191.
Chronic Dermatosis with Degeneration of Collagen: Case. F. R. Harper, Ann Arbor, Mich.—p. 201.
Generalized Lymphogranulomatosis of Skin: Case in Negro. J. W. Jones and H. S. Alden, Atlanta, Ga.—p. 212.
Lupus Erythematosus with Leukemic Observations: Case. F. R. Schmidt, Chicago.—p. 217.
Tubercle of Carabelli: Significance in Congenital Syphilis. J. J. Eller, New York.—p. 221.

Absorption of Sulphur Compounds During Treatment by Sulphur Baths.—Sixteen patients who presented various cutaneous conditions were given sulphur baths as a portion of the therapeutic regimen employed in their cases. The total sulphur content of the blood and urine was determined during the course of treatment. From these data, Osterberg et al. conclude that considerable sulphur is absorbed when a bath is prepared in such a way that sulphur dioxide is evolved. If the influence of sulphur dioxide is eliminated from the bath either by having the patient breathe through a gas mask or by preparing a bath containing only colloidal sulphur, the rise in the concentration of sulphur in the blood or the total amount of sulphur excreted is much less marked, although the therapeutic response is as good. Sulphur baths are a valuable adjunct in dermatologic practice, but the mechanism of their action is unknown. Further studies on this question are in progress.

Massive Weekly Inunctions with Mercury.—Cole et al. found that massive weekly inunctions of the body with 30 Gm. of mild mercurial ointment, U. S. P., equivalent of 9 Gm. of metallic mercury, caused little or no irritation of the skin. A slight salivation was noticed in one case. Studies of excretion showed a greater and more rapid cumulative excretion of mercury in the urine and as large a fecal output of mercury as with the simple inunctions with 50 per cent ointment, clean inunctions with 50 per cent ointment, simple inunctions with 25 per cent ointment, and the daily intramuscular injections of mercuric sodium bromide. The excretion of mercury in the after-period of four weeks was also similar to that following daily inunctions. The authors believe that the technic has practical advantages in the treatment of certain syphilitic patients.

Use of Gentian Violet in Erosio Interdigitalis Saccharomycetica.—With an absorbent cotton applicator, Cornbleet paints the lesion liberally with a 2 per cent solution of aqueous gentian violet; after this has dried, Gram's solution of iodine is applied. Applications are made twice daily. The use of rubber gloves in household work is advised, and contact of the affected areas with soap and water and ordinary irritants is avoided whenever possible.

Archives of Internal Medicine, Chicago

44: 155-302 (Aug.) 1929

*Diseases of Liver: VIII. Various Types of Syphilis of Liver: Tests for Hepatic Function. P. A. O'Leary, C. H. Greene and L. G. Rowntree, Rochester, Minn.—p. 155.
*Opium Addiction: VII. Comprehensive Study of Effects of Scopolamine Treatment for Morphine Addiction. A. B. Light and E. G. Torrance, Philadelphia.—p. 194.
*Blueberry Leaf Extract Overdosage. L. B. Shpiner, Chicago.—p. 204.
*Reticulocyte Count in Normal and Abnormal Conditions. A. Friedlander and C. Wiedemer, Cincinnati.—p. 209.
Variability of Blood Pressure: II. Systolic Pressure at Five Minute Intervals. H. S. Diehl and H. D. Lees, Minneapolis.—p. 229.
*Sugar Tolerance in Arthritis: II. Arthritis of Menopause. B. H. Archer, New York.—p. 238.
*Inorganic Serum Sulphates in Renal Insufficiency. E. G. Wakefield, Rochester, Minn.—p. 244.
Chemical Study of Urine as Affected by Combinations of Ammonium Chloride and Methenamine. E. C. Wise and F. W. Heyl, Kalamazoo, Mich.—p. 252.
*Relation of Withdrawal of Cerebrospinal Fluid to Body Temperature: Consideration of Thermoregulatory Center. A. Gordon, Philadelphia. —p. 263.
*Thrombo-Angionecrotic Changes of Kidneys in Chronic Nephritis. B. Sternberg, New York.—p. 272.
*Toxic Cirrhosis of Liver Due to Cinchophen. H. S. Reichle, Cleveland. —p. 281.
Pneumotachograph in Certain Intrathoracic Diseases. M. Hochrein and S. Weiss, Boston.—p. 289.

Types of Syphilis of Liver; Tests for Hepatic Function.—In view of the varied types of hepatic disease that may be produced by a syphilitic infection, O'Leary et al. feel that it is necessary to speak not of syphilis of the liver in the general sense but rather of a specific type of hepatic lesion. The chief characteristics of the clinical pictures and the results of laboratory examinations in these different conditions are discussed. This discussion emphasizes the difficulty of differential diagnosis that frequently is encountered and the importance in making the diagnosis of using all available information, whether from history, general examination, laboratory tests, therapeutic trial or prolonged observation. The indications for the use of the different tests for hepatic function and their limitations are discussed. These tests give results that are dependent on the extent and nature of the injury to the liver rather than on the specific etiologic agent concerned. For this reason, the probable type and extent of the pathologic process must be considered in interpreting the results of laboratory examination. When due regard is paid to these matters, the various tests of hepatic function have definite value in supplementing other methods of studying the patient.

Effects of Scopolamine Treatment for Morphine Addiction.—Studies made by Light and Torrance of a series of opium addicts before and after treatment with scopolamine revealed the following positive changes: loss of weight, slight rise in temperature, appearance of albuminuria, slight leukocytosis, slight concentration of the blood, a rise in the p_H of the blood, a rise in the lactic acid of the blood, a fall in the carbon dioxide capacity and a fall in the total number of points scored with Schneider's test of physical fitness. No significant changes were found in a comparison of the pulse, respiration rates and blood pressure while the addict was reclining, heart measurements, electrocardiographic studies, staircase climbing tests, effect of atropine sulphate on the P-R interval, vital capacities, blood urea nitrogen, blood sugar, blood uric acid, blood cholesterol, whole blood chloride, serum calcium and phosphate, blood viscosity, sedimentation tests, basal metabolism, phenolsulphonphthalein tests, phenoltetrachlorphthalein test of liver function, icterus index, van den Bergh's tests, and response of the blood sugar to epinephrine. The few positive observations do not coincide with the general appearance and behavior of the addict. He may present some or all of the foregoing positive symptoms and yet appear and behave as though he were normal. On the other hand, he may give the appearance of one who is quite ill and yet not show any of the foregoing positive symptoms.

Blueberry Leaf Extract Overdosage.—The result of Shpiner's experiments indicate that overdosage with blueberry leaf extract (myrtomel), both in normal and in partially pancreatectomized dogs, is without detectable effect. Assuming that the average weight of a dog is one-fifth that of man, he has fed dogs, on the basis of body weight, twenty times the therapeutic dose over a period representing 4.9 per cent of the life span of man without any noticeable untoward systemic effects. Its clinical trial in diabetes, therefore, is not fraught with any undesirable effects or possibilities.

Reticulocyte Count in Normal and Abnormal Conditions.—Studies made by Friedlander and Wiedemer indicate that the reticulocyte count in normal healthy adults will run from 0.03 to about 0.2 per cent. In other words, the reticulo-

cyte count in the normal healthy adult does not exceed 10,000 per cubic millimeter. It also seems established that there is a definite increase in the reticulocyte count in healthy persons during the spring months as contrasted with that during the winter months. Physiologic increase in the reticulocyte count is found in the new-born infant. There is also an increase during pregnancy. Studies on a series of patients with acute and chronic infections and with chronic diseases showed comparatively little variation from the normal, unless there was a complicating anemia. The authors were unable to trace any connection between the white cell count and the reticulocyte count. Counts made for a group of patients with active pulmonary tuberculosis showed no marked abnormalities. Counts on a group of workers in lead factories, who showed no clinical symptoms of lead poisoning, all ran high. Hemorrhage is usually a stimulus to regeneration of blood, as shown by the increase in the reticulocyte count. The time at which the maximum reticulocyte count is reached varies with the amount of the hemorrhage. It is normally reached about five days after the bleeding has stopped. The red cell count then begins to rise and, as it approaches normal, the reticulocyte count drops. Patients with familial hemolytic jaundice and with sickle cell anemia show high reticulocyte counts at all times. Patients with hemolytic jaundice (not familial) show some increase in the reticulocyte count, while patients with obstructive jaundice do not. This may, at times, afford a differential diagnostic index of some value. The reticulocyte count in acute leukemia is apt to be low. In chronic leukemia the reticulocyte count may offer an aid to prognosis. When the count is high the patient will probably have a remission; when it is low there is apt to be a relapse. Cases of hemophilia show a rise in the count only after hemorrhage. Cases of polycythemia show a low reticulocyte count. The value of the reticulocyte count as an index to the regeneration of blood in pernicious anemia has been so thoroughly attested that it is now generally accepted.

Sugar Tolerance in Arthritis.—In a series of twenty typical cases of arthritis of the menopause studied by Archer, fourteen, or 70 per cent, show a diminished sugar tolerance. This is in marked contrast to the parallel series of infectious cases in which only three, or 15 per cent, showed a lowered tolerance for dextrose. Ten of the fourteen cases showing a lowered tolerance for dextrose present, as associated conditions, hypertension or obesity or both. As it has been demonstrated that either hypertension or obesity may cause a lowering of the sugar tolerance, it is impossible to say that the diminished sugar tolerance found in this series of cases is due to the chronic disease of the joints that is present.

Inorganic Serum Sulphates in Renal Insufficiency.—Wakefield states that in cases of renal insufficiency, when the blood urea is above 100 mg. in each hundred cubic centimeters, values for inorganic serum sulphate are high. With blood urea values between 70 to 100 mg., serum sulphate concentration usually is increased. However, this increase in serum sulphates apparently has no direct correlation with blood urea and creatinine concentrations. Some evidence is offered that diuresis lowers the inorganic serum sulphates. Determination of inorganic serum sulphates in the five cases of chronic nephrosis studied were approximately normal. This would indicate that there may not be any retention of inorganic sulphate in nephrosis. Attention is called to the fact that patients who do not show evidence of renal disease may have higher inorganic serum values for sulphate than those observed in normal active persons.

Relation of Withdrawal of Cerebrospinal Fluid to Body Temperature.—Two hundred and fifty patients presenting a great variety of nervous and mental disorders were submitted to lumbar and ventricular punctures by Gordon. There were a group of adults and a group of children. The bodily temperature of each patient was taken before and several times within three hours after the puncture. Elevation of temperature began a few minutes after every such manipulation. In some cases, physiologic solution of sodium chloride was injected in lieu of the withdrawn cerebrospinal fluid. When the punctures were dry (no fluid obtained), the temperature remained unaltered. These observations, including those concerning the variation in the degree of the elevated temperature, indicate that a change in the stability or in the equilibrium of the cerebrospinal fluid brought about by either ventricular or lumbar puncture produces a change in the bodily temperature. The author concludes that there is a relationship between the cerebrospinal fluid and the changes in the bodily temperature. The fluid is actually in some relationship to a thermoregulatory center. Ventricular or spinal withdrawal of fluid produces an alteration in the configuration of the ventricles and consequently an irritation of the nerve endings in the ventricular walls. The third ventricle plays the most conspicuous part in thermic regulation.

Thrombo-Angionecrotic Changes of Kidneys in Chronic Nephritis.—One of a group of cases is described by Sternberg in which the characteristic feature is endarteritis with necrosis of the vessel wall and subsequent changes in the renal parenchyma. The vascular changes are not restricted to the kidney but are found also in vessels of the other organs of the body. Clinically, these cases are characterized by a comparatively rapid development of renal insufficiency. Changes of the eyegrounds are conspicuous. The condition is found in young or middle aged persons in contradistinction to cases described as arteriosclerotic nephrosclerosis. The following nomenclature is suggested: renal thrombo-angionecrosis for the more acute form and angionecrotic nephrosclerosis for cases of longer duration.

Toxic Cirrhosis of Liver Due to Cinchophen.—Reports of forty-seven cases of cinchophen toxicosis have been published, with ten deaths. In all cases there is evidence of serious injury to the liver. Reichle urges that every patient who receives cinchophen should be observed for gastro-intestinal symptoms, rashes or icterus and the occurrence of such symptoms should be the immediate indication for stopping the use of the drug. The therapeutic use of cinchophen may well be reevaluated in reference to its harmful properties.

Endocrinology, Los Angeles

13: 231-310 (May-June) 1929

*Hyperparathyroidism: Tumor of Parathyroid Glands Associated with Osteitis Fibrosa. R. M. Wilder, Rochester, Minn.—p. 231.
*Endocrine Studies in Dementia Praecox. R. G. Hoskins and F. H. Sleeper, Worcester, Mass.—p. 245.
Studies of Endocrine Glands: VIII. Protocols of Nonendocrine Cases Simulating Endocrinopathies. A. W. Rowe and C. H. Lawrence, Boston.—p. 263.
Malignant Adenoma of Parathyroid Glands. W. L. A. Wellbrock, Rochester, Minn.—p. 285.

Tumor of Parathyroid Glands Associated with Osteitis Fibrosa.—A case of osteitis fibrosa is described by Wilder in which conditions attributable to excessive parathyroid activity occurred in association with a malignant parathyroid adenoma. The symptoms and data included progressive weakness, loss of muscle tone, anemia, pain in the bones, decalcification of the skeleton, associated with an increase of organic matter and foreign body, giant-cell tumors, hypercalcemia and hypophosphatemia. Four similar cases recently reported by others are described. To some extent at least the disease is combated successfully by treatment with ultraviolet radiation and a diet rich in vitamin D. The suggestion is entertained that a rôle of vitamin D is the inhibition of the activity of the parathyroid glands. The surgical removal of the parathyroid tumor in the case reported was followed by marked improvement in strength and muscle tone, relief from pain in the bones, increased calcification of the bones, and the disappearance of a tumor of the maxilla.

Endocrine Studies in Dementia Praecox.—A metabolic study has been made by Hoskins and Sleeper of eighty subjects of dementia praecox. Of these, half gave definite or presumptive evidences of endocrine gland deficiency. In fourteen cases the thyroid gland was involved and in thirteen the pituitary. In thirteen others the specific gland at fault was not determined. Fifty-three of the eighty patients received gland treatment. In the endocrinopathic group half showed significant mental improvement. In the nonendocrine group only five instances of similar improvement were seen in thirty-nine experiments. Following the gland treatment, five patients became well enough to go home and treatment was suspended. One is continuing treatment at home and he, as well as three others still in the hospital, are nearly or completely free from psychotic manifestations. The highest incidence of improve-

ment has been noted in the catatonic and the lowest in the paranoid group. This is possibly correlated with high incidence of thyroid deficiency in the catatonic, and of pituitary deficiency in the paranoid subjects. Of the gland substances employed, thyroid proved most efficacious. Mental improvement followed its use in ten of eleven cases diagnosed as hypothyroid. In eleven nonendocrine cases none showed significant mental improvement following thyroid medication, though it served to correct certain physical conditions such as secondary anemia or reduced basal metabolism. The use of pituitary preparations by mouth was followed by improvement in three of twelve cases diagnosed as of pituitary deficiency. It is probable that the dosages were inadequate. The gonad preparation used gave no significant evidences of efficacy, mental improvement noted following the use of thyroid, pituitary or gonad substances alone. Two others improved on pluriglandular therapy.

Indiana State M. Assn. Journal, Fort Wayne

22: 307-348 (Aug. 15) 1929

Compound Fractures: Sixty-Two Cases. E. B. Mumford, Indianapolis. —p. 307.
Embolism of Leg: Case. J. R. Crowder, Sullivan.—p. 311.
Gwathmey Technic for Synergistic Analgesia in Primipara. J. C. Carver, Hammond.—p. 312.
Styes. B. D. Ravdin, Evansville.—p. 314.
State Medicine or What? M. A. Austin, Anderson.—p. 317.

Journal of Clinical Investigation, Baltimore

7: 313-526 (Aug. 20) 1929

Serum Electrolytes: IV. Chloride and Nitrogen Balances and Weight Changes in Pneumonia. F. W. Sunderman, Philadelphia.—p. 313.
Id.: V. Urinary Electrolyte Excretion in Pneumonia. J. H. Austin and F. W. Sunderman, Philadelphia.—p. 333.
*Effect of Exercise on Size of Normal Hearts and Enlarged Hearts of Dogs. H. J. Stewart, New York.—p. 339.
*Metabolism of Chloride and Total Fixed Base in Pneumonia: Relation to Salt and Water Retention. T. S. Wilder and T. G. H. Drake, Boston.—p. 353.
Investigation of Various Factors which Affect Sedimentation Rate of Red Blood Cells. M. D. Rourke and E. D. Plass, Iowa City.—p. 365.
Effect of Various Factors on Duration of Electrical Systole of Heart as Indicated by Length of Q-T Interval of Electrocardiogram. P. D. White and S. G. Mudd, Boston.—p. 387.
Calorigenetic Action of Thyroxin at Different Levels of Basal Metabolism in Myxedema. W. O. Thompson, P. K. Thompson, A. G. Brailey and A. C. Cohen, Boston.—p. 437.
Action of Sodium Chloride, Ammonium Chloride and Sodium Bicarbonate on Total Acid-Base Balance of Case of Chronic Nephritis with Edema. F. Albright and W. Bauer, Boston.—p. 465.

Effect of Exercise on Size of Normal and Enlarged Hearts of Dogs.—Experiments made by Stewart show that dilatation of the heart does not occur in normal dogs following voluntary exercise. On the contrary, the size of the heart decreases. When dogs in which the heart is enlarged in consequence of artificially created valvular defects, but in which there is presumably no myocardial disease and in which there are no signs of heart failure, are subjected to exercise, the size of the heart likewise decreases.

Metabolism of Chloride and Total Fixed Base in Pneumonia.—In an attempt to maintain an even weight in patients with pneumonia, Wilder and Drake have administered during the twenty-four hours 15 cc. of a tenth normal salt solution per pound of body weight with satisfactory results.

New England J. of Medicine, Boston

201: 291-344 (Aug. 15) 1929

Carcinoma of Head of Pancreas. I. J. Walker, Boston.—p. 291.
Recent Advances in Biology of Cancer. H. Jackson, Jr., Boston.—p. 294.
*Surgical Treatment of Embolism of Extremities. A. W. Allen, Boston. —p. 304.
*Bacteriologic Study of Group of Diseased Gallbladders. C. F. Branch, Boston.—p. 308.
Progress in Study of Cardiovascular Disease in 1928. H. B. Sprague, Boston.—p. 313.

Surgical Treatment of Embolism of Extremities.—Six embolectomies in seven attempts are reported by Allen: one brachial, one popliteal and four femoral. Three out of seven patients died in the hospital. Three patients had temporary restoration of circulation. One patient has permanent restoration of circulation (bifurcation of the femoral). Three of the four surviving patients required amputation.

Bacteriologic Study of Group of Diseased Gallbladders.—A bacteriologic and histopathologic examination of 210 gallbladders removed during the course of the routine surgical work was made by Branch. He found that in chronic cholecystitis the gallbladder is infected in approximately 12 per cent of the cases. In acute cholecystitis the gallbladder is infected in approximately 75 per cent of the cases. Approximately 40 per cent of all gallstones are infected. Bile in which the bile salts have a normal or high concentration has a marked inhibitory effect on bacterial growth. The predominating organisms recovered from infected gallbladders in the order of frequency are *Bacillus coli*, streptococci and staphylococci.

New York State J. of Medicine, New York

29: 985-1048 (Aug. 15) 1929

*Oxygen Therapy in Pneumonia. A. L. Barach, New York.—p. 985.
*Distribution of Physicians in Rural Districts of New York State. J. S. Lawrence, Albany.—p. 996.
Inverted Landry's Paralysis. E. N. Boudreau, Syracuse.—p. 1001.
*Mechanical Factors in Hair Growth. H. Sharlit, New York.—p. 1003.
How Are Hospital Appointments Distributed? M. M. Davis, Chicago. —p. 1005.
Eye in Diabetes. W. T. Davis, Washington, D. C.—p. 1009.
Relations of Medical Profession to Public. W. L. Niles, New York. —p. 1014.
Mailability of Medical Literature on Therapeutic Abortion and Contraception. R. L. Dickinson, New York.—p. 1019.

Oxygen Therapy in Pneumonia.—One hundred patients with pneumonia were treated in an oxygen tent or oxygen chamber. The group was characterized by the uniform presence of cyanosis, a generally critical condition of the patient, and the application of treatment late in the disease. Barach's analysis shows that the factors known to modify pneumonia mortality exert their influence in this series; namely, age of the patient, type of sputum organism, bacteremia and day of disease treatment is instituted. To this extent the limitations of oxygen therapy are revealed. Comparison of the mortality in this series with that of a group of untreated cyanotic pneumonia patients and a group of partly treated cyanotic patients shows a decided decrease in the oxygen-treated series. The absence, however, of untreated cases properly controlled in respect to the factors which of themselves influence pneumonia mortality prevents any conclusions of a statistical nature being drawn. The inference that a higher mortality would have obtained in the absence of oxygen therapy appears justified on the basis of personal observation and an analysis of the assembled material. The beneficial effects of oxygen therapy in individual cases are presented. Oxygen appeared to prolong the life of one patient who lived in an oxygen tent for two months until the patient finally developed an immunologic resistance to the disease.

Distribution of Physicians in Rural Districts of New York State.—This analysis, made by Lawrence, shows that mathematically the state of New York is better supplied with physicians today than it has been at any time in the last fifty years but that the actual number of physicians in the rural districts is not so great today as it was twenty-five years ago. However, the addition of the telephone and automobile to the physician's armamentarium has more than offset the decrease in number so far as rendering service to the population is concerned. On the other hand, the intensive public health educational campaigns have stimulated in the public greater interest in health, which manifests itself in the greater concern individuals take for the preservation of their health, which, naturally, calls for increased demand on physicians for advice. There are many places in New York State where active young men can build up lucrative practices, particularly if they feature preventive medicine programs.

Mechanical Factors in Hair Growth.—Sharlit calls attention to the fact that persistent care of the hair and scalp, frequent massage and manipulation of the scalp to keep its surface clean and the follicular openings free from inspissated sebum and epithelial débris is a trait distinctly dominant in the female and recessive in the male. In the last decade with bobbed hair in vogue there has been an increasing number of women complaining of alopecia symptomatica. Can it be that with a shortening of the hair there has been a relaxation in feminine zeal for meticulous care of the scalp? Scalp lotions containing keratolytic agents and fat solvents, reinforced possibly by a rubefacient, with mechanical rubbing of the scalp, is a sensible treatment.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 173-230 (Aug. 3) 1929

Roentgen Rays in Diagnosis of Early Carcinoma of Stomach. M. Haudek.—p. 173.
*Value of Physiologic Tests of Renal Function. E. B. Verney.—p. 179.
Radium Teletherapy. E. R. Carling and A. J. Leslie-Spinks.—p. 180.
Spinocain: Controllable Spinal Anesthetic. G. P. Pitkin.—p. 183.
Clinical Aspects of Controllable Spinal Anesthesia. F. A. Kelly.—p. 187.

2: 231-284 (Aug. 10) 1929

Pelvic Sepsis. A. L. McIlroy.—p. 231.
Activated (Irradiated) Fluorescein in Treatment of Cancer. S. M. Copeman, F. Coke and C. Gouldesbrough.—p. 233.
Lesions of Latent Syphilis. A. S. Warthin.—p. 236.
Bilateral Spontaneous Pneumothorax: Case with Recovery. D. E. Bedford and H. Joules.—p. 240.
New Analyses of Carbohydrate Foods and Application to Diabetic Diets. R. D. Lawrence and R. A. McCance.—p. 241.
Health Propaganda: I. Administrative Point of View. F. E. Wynne. —p. 242.
Id.: Practitioner. H. C. Jonas.—p. 243.
Id.: Press. H. A. Gwynne.—p. 244.

Value of Physiologic Tests of Renal Function.—It has been shown that caffeine increases the number of active glomeruli in the frog's kidney, and, in the case of the isolated kidney of the dog, the increased flow of urine is explicable in terms of an increased effectiveness of the pressure stimulus. Hence Verney suggests that the systematic employment of this drug under controlled conditions in nephritis might throw some light on the capacity of the kidney to perform extra work. A large response would point to a correspondingly large functional reserve, a small response to a small current reserve, which might or might not increase with the lapse of time.

Heart, London

15: 1-123 (Aug. 3) 1929

Standard Colors for Use in Study of Vascular Reactions of Human Skin. T. Lewis.—p. 1.
*Experiments Relating to Peripheral Mechanism Involved in Spasmodic Arrest of Circulation in Fingers; Variety of Raynaud's Disease. T. Lewis.—p. 7.
Anatomy of Thebesian Vessels of Heart. R. T. Grant and L. E. Viko. —p. 103.

Peripheral Mechanism Involved in Spasmodic Arrest of Circulation in Fingers.—A variety of Raynaud's disease is described by Lewis; it is the form in which the digits become periodically pale or cyanotic and in which, after several or many winters of repeated attacks, terminal portions of the digits may be lost by a process of slow dry gangrene. The environmental circumstances in which attacks appear and disappear have been determined and the events of the recovery from attacks closely watched. In mild cases recovery is complete, circulation becoming normal. In severer cases the circulation is persistently reduced to a low point at ordinary room temperatures, the fingers remaining under all ordinary conditions at the temperature of the surrounding air; the fingers do not react to overcooling as do normal fingers. These are the cases in which local gangrene develops. The immediate cause of the defective circulation is shown to be spasm of the digital arteries. Vessels of smaller caliber and vessels on the venous side are not primarily involved in spasm. The digital arteries are capable of full expansion or almost full expansion. The meaning of various discolorations, cyanosis, pallor and reddening that are displayed is fully discussed. Local applications of heat and cold show that the spasm is profoundly influenced by temperature, in response to which the vessels behave abnormally. These observations are opposed to the current view that the spasm is vasomotor in origin; the abnormal element in the reaction to cold is a direct reaction and due to a peculiar condition of the vessel wall locally; it is not the result of a reflex through the vasomotor nerves. The state of vasomotor nerves naturally influences the tone of the vessels in these patients, as it does in normal persons, but the pathologic element in the vascular spasm is not of nervous origin, as at present it is generally thought to be. The effects of interfering with the nerves to the affected parts, by local anesthesia or by surgical division, are fully discussed from this standpoint, as are observations attempting to relate the vascular phenomena with diseases of the nervous system, and as are observations on the retinal vessels.

Practitioner, London

123: 97-164 (Aug.) 1929

Epitympanic Suppuration. W. Milligan.—p. 97.
Modern Surgery in Treatment of Empyema. F. J. Hathaway.—p. 103.
Old Age and Death. E. A. Barton.—p. 111.
Functions of Spleen in Relation to Splenectomy. E. C. Bowden.—p. 120.
Ionization and Electrolysis: Reduction to Potential. F. H. B. Norrie. —p. 132.
Treatment of Accessible Aneurysm. R. K. Ford.—p. 138.
*Albumin in Sputum as Aid to Early Diagnosis of Pulmonary Tuberculosis. P. Moxey.—p. 142.
Reeducating Cleft Palate Speech. W. K. Ward.—p. 147.

Albumin in Sputum as Aid to Early Diagnosis of Pulmonary Tuberculosis.—Moxey asserts that as an aid to diagnosis much more reliance can be placed on the result of the examination of the sputum for the presence of albumin than for the presence of the tubercle bacillus. In all cases examined in which tubercle bacilli were found, albumin also was detected; moreover, the quantity of albumin as estimated by Esbach's test is proportionate to the numbers of bacilli present. Moxey deems it reasonable to suppose that, if albumin is always found when tubercle bacilli are present, the presence of albumin, even if tubercle bacilli cannot be detected, must be of considerable importance in the diagnosis of a pulmonary lesion; and in actual practice he finds that this is the case. Of 2,500 examinations of sputum, about 25 per cent showed the presence of both tubercle bacilli and albumin; in nearly 50 per cent only albumin was present, and in the remainder both were absent. During the last four years there have been only two cases in which bacilli were present and albumin was absent, and in both these cases albumin was found when a second test was made.

Tubercle, London

10: 497-544 (Aug.) 1929

Fate of Young Children in Tuberculous Households. G. L. Cox.—p. 497.

Japanese J. Obstet. & Gynecology, Kyoto

12: 82-179 (June) 1929

Pulmonary Lipase in Human Fetus and Human New-Born Child. T. Tachibana.—p. 82.
*Effect of Pregnancy, Labor and Puerperal Confinement on Function of Circulatory System: Blood Pressure of Capillaries. Y. Kanki.—p. 91.
Physiologic Investigation of Fetus: Lactase in Intestinal Canal. T. Tachibana.—p. 100.
Id.: Amylase in Intestinal Canal and Liver. T. Tachibana.—p. 111.
Bacteriologic Study of Peritoneal Cavity in Case of Uterus Cancer Before and After Operation. T. Sato.—p. 121.
*Cancer of Uterus and Pregnancy. K. Ihdima.—p. 123.
Effect of Excessive Corpora Lutea on Pregnancy and Labor. F. Kubo. —p. 127.
*Birth Injuries in New-Born: Intracranial Hemorrhage in New-Born Infants. H. Yagi.—p. 130.
Neck Edema Due to Nephritis of Pregnancy. Y. Kanki.—p. 134.
Functional Stenosis of Soft Parturient Canal Indicating Cesarean Section. T. Sasaki.—p. 137.
Life Duration in Case of Cancer of Uterus When Palliative Treatment is Given. T. Kumamoto.—p. 140.
Anuria Due to Irradiation. R. Mibayashi.—p. 142.
Change in Blood Figure Before and After Operation in Case of Uterine Cancer. Y. Suwa.—p. 146.
Investigation of Ferments in Inner Genitals of Women: Lipase in Fallopian Tube. T. Tachibana.—p. 150.
Fluctuation of Normal Immune Bodies in Blood of Gravid and Puerperal Women: Normal Agglutinin. T. Sato and Y. Katsu.—p. 152.
Id.: Normal Precipitin. Y. Katsu and T. Sato.—p. 156.
Histologic Investigation of Pancreas by Means of Ligature of Vena Pancreatica and Ductus Pancreaticus. T. Akehi.—p. 158.
Pregnancy, Puerperium and Labor of Elderly Primipara. S. Kimura. —p. 161.
Krönig's Operation: Effect on Transplanted Uterus Sarcoma in Rabbit. T. Kumamoto.—p. 167.

Blood Pressure of Capillaries in Pregnancy.—In ninety-four healthy pregnant women who were examined by Kanki, the average capillary blood pressure obtained was 139.4 mm., the lowest being 95 and the highest 208 mm. of water. The blood pressure of the capillaries of the healthy women in puerperium was higher on the first day after labor than that of any other period of pregnancy and it gradually receded until the normal value was reached. The capillary blood pressure of pregnant women with edema was higher than the normal value. There was no relationship existing between the capillary blood pressure and the ordinary blood pressure.

Cancer of Uterus and Pregnancy.—Ihdima analyzes thirty-seven cases of pregnancy in women who had a cancer of the uterus. On the average these women were eight years younger than sufferers from general cancer; otherwise there was no difference from the usual cancer case.

Intracranial Hemorrhage in New-Born Infants.—Analysis of sixty-nine cases of intracranial hemorrhage at birth has convinced Yagi that this lesion has a close connection with the subsequent mental and physical development of the infant.

Archives de Médecine des Enfants, Paris

32: 377-440 (July) 1929

Hydatid Cyst of Brain in Child. L. Morquio.—p. 377.
*Balanced and Unbalanced Overfeeding in Etiology of Rickets and Scurvy. G. Mouriquand.—p. 395.
Multiple Hereditary Exostoses. E. Apert and C. L. Peytavin.—p. 403.

Balanced and Unbalanced Overfeeding in Etiology of Rickets and Scurvy.—Mouriquand states that dystrophia caused by artificial underfeeding does not present the symptoms of true rickets. In connection with vitamin C deficiency typical scurvy may ensue. In excessive growth due to the overfeeding of healthy breast-fed infants, symptoms of rickets or scurvy do not appear because the "specificity" of the maternal milk protects the infants. In artificially overfed infants digestive disturbances occur, which favor the development of rickets but even when vitamin C deficiency is present scurvy does not develop. These clinical observations are corroborated by animal experiments. Mouriquand stresses the importance of the balance between calories and vitamins in the nutrition of infants.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

55: 793-840 (June 15) 1929

Splenectomy in Splenic Anemia (Report Twenty-Six Months After Operation). P. Brocq and A. Cain.—p. 794.
Osteoplastic Treatment of Congenital Dislocation of Hip Joint. Lance.—p. 803.
*Surgery of Biliary Tract: Obstruction of Common Bile Duct by Lymph Node. M. Vanlande.—p. 807.
*Rupture of Thoracic Duct: Chylothorax of Left Side. Paitre.—p. 813.
Old Fracture of Astragalus and Inner Malleolus: Astragalectomy and Fixation of Tibiocalcanean Joint. P. Ibos.—p. 816.
Transplantation of Fibula to Replace Loss of Substance in Tibia. P. Moulonguet.—p. 819.
Tumor Albus of Knee Joint: Operation According to Robertson Lavalle. P. Lombard.—p. 829.
Large Sebaceous Cyst of Scalp. Le Roy des Barres.—p. 831.
Case of Splenic Anemia. P. Brocq.—p. 832.
Fracture of Anterior Tuberosity of Tibia. C. Dujarier.—p. 833.
Voluminous Glioma of Right Parieto-Occipital Region: Three Operations; Cure. De Martel, C. Vincent and David.—p. 834.
Temporofacial Tumor of Meninges. R. Proust and C. Vincent.—p. 834.

Surgery of Biliary Tract: Obstruction of Common Bile Duct by Lymph Node.—Vanlande's case (reported by Baumgartner) was in a patient who developed intense pain and vomiting of bile seventeen months following appendectomy. In the history an old malarial infection was discovered. The spasms of vomiting became more and more painful, and one year later icterus developed. A diagnosis of calculi of the gallbladder and common bile duct was made by Vanlande and operation was advised. No calculi were found, but at the junction of the hepatic and cystic ducts a hard lymph node the size of a small hazel nut was found pressing on the common bile duct. After removal of the lymph node the bile duct filled with bile and took on a greenish hue. The same evening double congestion of the lungs was manifest. The patient had been shot in the lung during the war and retained a splinter in the right lower lobe. The operative wound healed in spite of the complication and six weeks later the patient left the hospital completely recovered.

Rupture of Thoracic Duct: Chylothorax of Left Side.—Paitre's report (discussed by Lenormant) concerns the victim of a motor car accident. Examination disclosed a fracture of the sixth rib and of the right hip. No other injury could be detected. Forty hours after the accident the patient's condition became aggravated. Dyspnea and cyanosis were noted. The pulse was 120, and the temperature 39 C. (102 F.); sweating was profuse. This condition lasted for twenty-four hours. On examination, an effusion into the left pleural cavity was observed which on puncture yielded a yellowish thick fluid. Chemical analysis and cytologic examination led to the diagnosis of traumatic chylothorax. A roentgenogram failed to reveal any signs of lesions on the left side. A strict diet free from all fats, and milk, was prescribed, together with heart stimulants and dextrose solution by rectum. A loss of weight of 8 Kg. was registered within the first ten days. The lost weight was regained in the following weeks and the patient recovered completely without showing signs of internal injury except for the fractures.

Journal de Médecine de Lyon, Lyons

10: 397-422 (June 20) 1929

*Malaria Therapy of Paresis. J. Lépine, L. Bourrat, H. Christy and E. Larrivé.—p. 397.
*Differentiation of Primary Tumors of Cauda Equina. L. and M. Bériel.—p. 403.
Parkinson's Syndrome in Relation to Muscular Exhaustion. J. Froment, P. Ravault and J. Dechaume.—p. 409.

Malaria Therapy of Paresis.—Results obtained in the treatment of paresis in fifty-four patients are reported by Lépine et al. Malaria therapy followed by treatment with arsenic preparations at an early stage of the disease constitutes today the best method for obtaining permanent results. Contraindications to the treatment are the age of the patients (in opposition to the German school) and organic disturbances such as tuberculosis, diabetes and chiefly nephritis. Aortitis, however, presents no obstacle. Persons with severe alcohol addiction should be subjected to treatment for alcoholism before application of the malaria therapy. In 11 per cent of the cases reported, the patient died. Strict supervision combined with accurate technic may reduce the number of fatal accidents.

Differentiation of Primary Tumors of Cauda Equina.—The Bériels discuss the differentiation of primary tumors of the cauda equina. It is requisite from the point of view of surgical intervention. The differential diagnosis is complicated by the fact that all pathologic conditions in this region present similar symptoms. Characteristic pain, lack of urinary disturbances, roentgenologic differentiation, and the partial asymmetry of the symptoms and their evolution present the only guides in diagnosis. Especially complicated is the differentiation from metastasis of cancer, leptomeningitis and certain other diseases of the cauda equina. The location of the tumor constitutes a problem that may be solved by roentgenologic means or by a study of the reflexes.

Presse Médicale, Paris

37: 893-908 (July 10) 1929

Interrelation of Nerve Roots in Lumbosacral Subarachnoid Space. E. Forgue and G. Laux.—p. 895.
*Heroic Thoracectomy in Open Empyema in Patients with Pulmonary Tuberculosis. L. Bérard and M. Guilleminet.—p. 898.
Study of Sympathetic Nervous System Based on Histologic Examination of Forty Operative Specimens. R. Leriche and R. Fontaine.—p. 903.
Histochemical Investigation of Pulmonary Anthracosis. A. Policard and S. Doubrow.—p. 905.

Heroic Thoracectomy in Open Empyema in Patients with Pulmonary Tuberculosis.—When spontaneous perforation takes place in tuberculous empyema, it is solely a matter of time how long the patient can survive. Bérard and Guilleminet therefore consider operation heroic. The prognosis is more favorable in a parietal fistula than in a perforation of the bronchi. The case reports of six of twenty patients who came under their observation are given. The authors stress the value of early surgical intervention based on clinical and roentgen examinations.

Schweizerische medizinische Wochenschrift, Basel

59: 665-696 (June 29) 1929

Hospital Physicians and Continued Instruction. F. de Quervain.—p. 665.
Education of Nurses. C. Ischer.—p. 667.
Rational Management of Hospitals. Häberlin.—p. 669.
Economic Value of Hospitals. Gelpke.—p. 671.
*Cardiac Murmurs and Subfebrile Temperature as Frequently Overlooked Symptoms of Hyperthyroidism. R. Zollikofer.—p. 674.
*Erythrocyte Sedimentation Reaction and Its Significance for the General Practitioner. H. Rothpletz.—p. 676.
Social Welfare Work in Hospitals. A. Ritter.—p. 679.
Practical Methods for Sterilization of Surgical Instruments. M. Lauber.—p. 686.
Legal Significance of Official Inspection of a Corpse and of Death Certificate. Remund.—p. 686.
Treatment of Hernia in Infants and Children. E. Monnier.—p. 687.
*Determination of Coagulation with Combination Method. Fonio.—p. 689.

Cardiac Murmurs and Subfebrile Temperature as Frequently Overlooked Symptoms of Hyperthyroidism.—Zollikofer points out that the significance of cardiac murmurs is often overvalued. They do not always indicate an organic cardiac disturbance. In examining 500 patients with various diseases, he detected cardiac murmurs in more than half of them. Some authorities are of the opinion that cardiac murmurs may occur in a person with an entirely normal heart. The author observed that cardiac murmurs are an especially frequent manifestation in patients with hyperthyroidism. This thyrogenic cardiopathy frequently causes difficulties in the differential diagnosis. It shows many characteristic symptoms in common with mitral disturbances. However, thyrogenic cardiopathy is usually not a serious condition. Observation has proved that the majority of patients with goiter do not develop dangerous cardiac disturbances. Subfebrile temperature is another symptom that often becomes manifest in hyperthyroidism. The author reports several cases in which the increased temperature lasted for long periods and was thought to be due to tuberculous processes. Careful examination and observation did not substantiate the existence of tuberculosis but rather proved that the subfebrile temperature was caused by hyperthyroidism.

Erythrocyte Sedimentation Reaction and Its Significance for the General Practitioner.—Rothpletz describes a simple technic for the erythrocyte sedimentation reaction. The blood is taken from the cubital vein, if possible under slight stasis. From 4 to 5 cc. is necessary for the reaction. To prevent coagulation a solution of sodium citrate is added. The solution and the blood should be in the ratio of 1 to 4 and should be well mixed. The tube is left standing for about an hour at a temperature of from 63 to 68 F. After that the reaction may be read by measuring with a millimeter rule the column of clear plasma above the settled erythrocytes. In healthy men the maximum is 9 mm.; in normal women the maximum is 12 mm. In juveniles the sedimentation is about the same as in women. Pathologic conditions are indicated whenever the sedimentation reaches higher values than the maximum in normal persons. The author states that this simple test may be performed not only in the physician's office but also at the bed side in the home of the patient. He gives tabular reports of the results of this test in 4,000 patients. He further discusses its significance in tuberculosis, syphilis and malignant tumors. He concludes that the sedimentation reaction, in this simple form, is a helpful diagnostic aid and should be included in every systematic examination. It often proves valuable for differential diagnosis and for prognosis.

Determination of Coagulation Time with Combination Method.—It is pointed out by Fonio that formerly, when the coagulation time was tested, only the time factor was considered. The cause of a disturbance in the coagulation was not investigated. The author states that because numerous factors are involved in the mechanism of coagulation, all of them should be tested. According to the present status, this is not yet possible. However, there are several methods of examination that will enable one to gain a better and clearer insight into some of these factors. The following are the methods recommended by the author: 1. Determination of the time of coagulation. 2. Determination of the valence of coagulation; that is, the capacity of the blood to overcome certain hindrances to coagulation. 3. Determination of the tensile strength and flexibility of the coagulum of the fibrin. 4. Determination of the retractility of the coagulum. These four methods of examination are the so-called combined examination of coagulation and may be performed simultaneously. Only one withdrawal of blood from the median cubital vein is necessary. This method has proved valuable, especially before goiter operations. In patients in whom the coagulation seems unfavorable, the operation is postponed until preliminary treatment has improved the prospects of a normal coagulation. The "combined examination of coagulation" has also proved helpful in determining the operability of patients with icterus. It is also of diagnostic value. Patients with hyperthyroidism generally show a reduced coagulability, whereas in individuals with deficient activity of the thyroid, the coagulability is above the normal. Typical reactions were likewise observed in patients with tuberculosis.

Archivio di Patologia e Clinica Medica, Bologna

8: 379-490 (April) 1929

*Influence of Antituberculous Vaccination on Certain Biochemical Components of Blood. M. Barbàra.—p. 379.
*Etiology of Malignant Lymphogranulomatosis. A. Martinolli.—p. 395.
Salivary Glands and Glycemia. S. Caccuri.—p. 408.
Clinical and Experimental Researches on Electrical Alternation. L. Condorelli.—p. 428.
*Influence of Embryonic Trephones on Body Development. L. Ferrannini.—p. 453.
Types of Pleurisy in Which Effusion Contains Cholesterol Crystals. A. Malaguti.—p. 465.

Influence of Antituberculous Vaccination on Certain Biochemical Components of the Blood.—In summing up, Barbàra presents these conclusions: Biochemical studies on the blood in congenital tuberculosis reveal that it is characterized by hyperglycemia in 85.7 per cent of the cases; hyperuricemia in 80.9 per cent; hyperpotassiemia in 52.3 per cent; hypocholesterolemia in 61.9 per cent, and normal calcemia in 47.6 per cent. From thirty to forty days following treatment of the same subjects with Maragliano's preventive vaccine, when the specific antibodies are increasing, there are found almost invariably some of the initial biochemical characteristics; namely, hyperuricemia in 94.7 per cent of the cases and hyperpotassiemia in 61.1 per cent of the cases. There is, however, an increase over the normal calcemia in 66.6 per cent of the cases, and a tendency to normalization in the potassium-calcium relation (83.3 per cent). On the other hand, the hyperglycemias diminish to 52.6 per cent, while the number of normal glycemias is increased to 43.3 per cent. There are, however, as a new finding, high values in cholesterol (100 per cent of the cases); this fact is all the more significant because postvaccinal hypercholesterolemia takes the place of just the opposite biochemical condition; namely, an initial hypocholesterolemia. These changes justify the assumption that the defense phenomena, which develop as a result of antituberculosis vaccination and the relative immunizing reactions, have a particularly close relation, above all, to cholesterol. The constantly perceptible increase in cholesterol after antituberculosis vaccination, together with what is known concerning its relations to the phenomena of immunity, is in favor, though indirectly, of the importance ascribed to the lipoids as a chemical substrate of the development of immunizing phenomena and as factors of humoral immunity to tuberculosis.

Etiology of Malignant Lymphogranulomatosis.—After discussing the principal bibliographic data on the etiology of malignant lymphogranulomatosis, Martinolli describes a peculiar glandular lesion of a lymphogranulomatous type that he observed during experimental studies on the transplacental transmission of tuberculosis. He inoculated a series of guinea-pigs with pieces of organs (liver and spleen) of twelve fetuses, obtained from interruptions of pregnancy for pulmonary tuberculosis, and kept them under observation for from nine to sixteen months. When they were killed, no changes were found, in spite of rigorous histologic examination of the various organs. From a part of these guinea-pigs the spleen was removed under sterile conditions and used to inoculate a second series of guinea-pigs. In this second group, after about three months of observation, interesting lesions in the liver, lungs and lymph nodes were discovered. In these organs, characteristic tuberculous lesions were found and in the inguinal lymph nodes of one guinea-pig a condition similar to that found in malignant lymphogranulomatosis was observed. No tubercle bacilli could be found, although an accurate search was made. In view of the failure to find tubercle bacilli, the necessity of a passage through several animals in order to obtain the specific lesions described and the same origin of the infective material, and in consideration of the most recent conceptions in regard to the filtrable elements of tuberculosis in connection with the transplacental transmission of that infection, Martinolli advances the idea that malignant lymphogranulomatosis may possibly be produced by the filtrable elements of the tuberculous virus.

Influence of Embryonic Trephones on Body Development.—Ferrannini concludes that organ extracts and embryonic tissues (trephones) never exert a dangerous influence and ordinarily favor the growth of the body, especially if growth is retarded by hypotrophy or rachitism; they increase the weight of the body and (but less frequently) the height. It may be said that, with relation to the different subjects and their age,

sometimes one and sometimes the other factor prevails, in accordance with Viola's law pertaining to the antagonism between morphologic development and increase in weight. But the various preparations do not always have the same favorable action.

Policlinico, Rome

36: 547-582 (April 22) 1929. Practical Section

Serous Meningitis and Its Ocular Symptomatology. F. Mezzatesta.—p. 547.
*Dysentery Due to Bacillus Ceylonensis. S. Fichera.—p. 550.
Congenital Manus Torta. G. Montemartini.—p. 552.

Dysentery Due to Bacillus Ceylonensis.—Fichera reports in a man, aged 53, the first case of dysentery due to *Bacillus ceylonensis* A discovered in Italy. Castellani confirmed the author's observation. The author found also agglutinative evidence of *B. metadysentericus* in the blood serum of his patient. A single attempt to isolate the specific agent from the feces proved unsuccessful. For treatment the author prepared a vaccine from *B. ceylonensis* A, which was administered in increasing doses. It did not give rise to any unpleasant reactions, and caused the slight fever to disappear entirely. The diarrhea improved, although it did not cease at once. The general condition of the patient improved considerably.

36: 173-224 (April 15) 1929. Surgical Section

*A Bilateral Cervical Rib with Bernard-Horner Syndrome on Left Side. F. Melina.—p. 173.
*Meckel's Diverticulum: Intestinal Occlusion. M. Melletti.—p. 188.
*Rare Form of Solid Tumor of Ovary, the Cause of Dystocia. S. Tirelli.—p. 209.

Bilateral Cervical Rib.—Melina reports a case of a bilateral cervical rib originating from the seventh vertebra, with compression of the subclavian artery and irritation of the brachial plexus on the left. The left cervical rib, which was about 5 cm. long, was removed surgically under ether narcosis. There were no disturbances on the right side. From an examination of the roentgenograms, while recognizing as the primary and more important causal factor a vertebral congenital deformity, one is inclined to ascribe to the cervical rib a mechanical influence in the production of the scoliosis. Whenever one observes disturbances of a certain nature, whether vascular, nervous or mixed, one may well consider the possibility of the existence of this skeletal anomaly and resort to a radiologic examination. Once the diagnosis is established, radical treatment can be only surgical.

Meckel's Diverticulum.—Melletti points out that Meckel's diverticulum is present in 2 per cent of the population and causes more or less serious disturbances in 1 per cent of the cases. The accidents caused by Meckel's diverticulum vary considerably, but the most important, from the standpoint of frequency, are intestinal occlusion, acute or chronic diverticulitis and peptic ulcer of the diverticulum. In general, the accidents to which the diverticulum may give rise are distinguished by a particular gravity from similar accidents due to other causes or having other locations. Thus, acute diverticulitis is characterized by common perforation and diffuse peritonitis. Peptic ulcer of the diverticulum, owing to the frequency and the gravity of the enterorrhagia, is sometimes fatal. The occlusions are singularly grave, with a mortality around 65 per cent. The most frequent and the most grave mechanism of diverticular occlusion consists in the formation of a ring by the adherent diverticulum, in which loops of the small intestine may become incarcerated. An exact diagnosis, in the majority of cases, has not been made. However, since the surgical indications are almost always evident, the surgeon has no reason to lose precious time. If excision of the diverticulum is resorted to, one must be very careful lest buckling result at the site of the suture or ugly scars develop as a result of poor vascularization of tissues. As, in acute cases, the patients are for the most part in a very grave condition, the best thing to do is that which is indispensable, and with as little delay as possible.

Ovarian Tumor, the Cause of Dystocia.—Tirelli describes a solid ovarian tumor, of slow development, which revealed itself solely because of the fact that it made the birth of a child impossible. It appeared to be of the mast cell type. It presented a characteristic not hitherto described in the literature; namely, the presence of numerous giant cells, which the author regards as due to a peculiar reaction of stromatic tissue. The neoplasm, in spite of its cancerous structure, has shown no signs of recurrence since its removal, fourteen months ago. This type of tumor in a parturient has not been previously described in the literature.

Riforma Medica, Naples

45: 487-515 (April 13) 1929

A Century of Revindications of Priority of Italians with Respect to Certain Scientific Contributions in Fields of Medicine and Surgery. L. Castaldi.—p. 487.
*Results of Vaccinotherapy with Blastomyces Paraneoformans in Malignant Tumors. F. Sanfelice.—p. 499.
A Contribution to the Knowledge of Appendicitis. G. Regoli.—p. 500.

Inoculation with Blastomyces Paraneoformans in Malignant Tumors.—Sanfelice has used with good results in sarcomas a suspension of *Saccharomyces paraneoformans* in physiologic solution of sodium chloride. One outstanding case in which cure was effected was a giant-cell sarcoma of the upper jaw in a woman, aged 32. He has employed the treatment with success also in cancers recurring after operations, and in some instances patients have survived several years since the treatment was given; but he thinks the time is not yet ripe to discuss these cases in detail. The value of his method, he explains, can be shown only when a comparison can be made between a series of cancers operated on and treated with his remedy and a series of cancers operated on and not so treated.

Arch. Españ. de Enf. del Aparato Dig., etc., Madrid

12: 257-320 (May) 1929. Partial Index

*Gastric and Duodenal Ulcers and Gallstones. M. Corachán.—p. 257.
*Surgical Treatment of Colitis. C. González.—p. 279.

Gastric and Duodenal Ulcers and Gallstones.—Corachán operated on 356 patients with gastric and duodenal ulcers. In five (1.4 per cent) unsuspected gallstones were found. He also performed operations on forty-three patients with lesions of the gallbladder, and in one of these a duodenal ulcer was found. The author reviews the literature on the association of pyloric ulcer and cholecystitis. He believes that there is a pathogenic interrelation between gastric and duodenal ulcers and gallstones, and reports six cases of his own. The age of the patients varied from 32 to 66 years. The duration of the disease varied between six months and thirty-six years. Pain in the epigastrium, sometimes radiating and sometimes localized, was a symptom in all the cases. Stones were found in all. In one of the cases a large stone and four small stones were removed. Three patients died: in one, death was caused by shock, in another, by a recurrent hemorrhage through the operative wound, and in the third the poor condition of the patient was the cause of death. In some cases the symptoms of cholelithiasis preceded the appearance of symptoms of ulcer, and in others the opposite was noted. The author advises that in patients with gallbladder disturbances, the stomach should be examined carefully, as should the gallbladder in patients with gastric disturbances.

Surgical Treatment of Colitis.—González believes that in the treatment of intractable colitis, when diet and attempts to cauterize the lesions in the colon have failed, surgery offers good results. He operated in eighteen cases of colitis and obtained good results. The most common forms of the disease were ulcerative colitis and sclerotic colitis. Most of the patients were women who complained of a previous acute attack of colitis from which they had recurrent remissions before menstruation. During the attack, they had five or ten bowel movements every day with enough blood to cause anemia and a poor general condition. Whenever possible, the author avoided an operation, making an artificial anus. He prefers intestinal anastomosis. In only one of his cases did he resort to colectomy.

Semana Médica, Buenos Aires

36: 1655-1714 (June 27) 1929

Orthopedic Surgery in Treatment of Pes Cavus. J. Dellepiane Rawson.—p. 1655.
Parturition by Natural Route Following Cesarean Section. A. Peralta Ramos and A. J. Guiroy.—p. 1666.
Longitudinal Fracture of Os Magnum of Right Hand. A. J. Costa.—p. 1676.
*Hypertrophic Acne Treated by Electrocoagulation: Recovery. C. Lettieri and C. Salvo.—p. 1678.

*Late Hemorrhage from Operative Wound as Symptom of Hepatic Insufficiency After Choledochotomy. M. Cieza Rodriguez.—p. 1680.
Yellow Fever: Differential Diagnosis. F. Otero.—p. 1682.
Vascular Disturbances of Leg Following Trauma. J. Giménez Zapiola.—p. 1685.
Prophylaxis of Epidemics in Rosario de Santa Fe, by Burning of Waste. J. B. Valdés.—p. 1688.
Mixed Septicemia. Barralt and Mazzei.—p. 1696.
*Amebic Enteritis and Sudden Death: Ventricular Fibrillation: Emetine Poisoning. J. Montes Pareja.—p. 1697.

Hypertrophic Acne Treated by Electrocoagulation.—Lettieri and Salvo obtained good results with electrocoagulation in a patient, aged 71, who had had hypertrophic acne for twelve years. The patient's face was disfigured by three large protuberances, which exuded abundant pus. Facial pruritus was present. Medical treatment had failed. Six treatments of electrocoagulation were given at intervals of from fifteen to twenty days. After each treatment a white painless edema appeared and lasted one or two days. The authors used the high frequency current. The aim in the first three treatments was to destroy the deformities; in these treatments the intensity of the current varied from 0.7 to 1.05 amperes. The aim of the last three treatments was to give an effleurage on the hypertrophic skin to improve the appearance of the patient's nose. In these treatments the intensity of the current was less than 0.7 amperes. In all treatments the duration of the treatment was less than two minutes. Immediately after the treatments the patient had a normal aspect and one year later, his face was normal.

Late Hemorrhage from Operative Wound as Symptom of Hepatic Insufficiency After Choledochotomy.—Cieza Rodríguez's patient, aged 46, had symptoms of lithiasis when he was 36 years old. Ten years later the symptoms were more marked. Medical treatment gave relief on both occasions. But as the symptoms reappeared oftener and increased in severity, cholecystectomy was performed. About one year later the patient presented marked jaundice and angiocholitis. The angiocholitis was associated with obstruction caused by calculi in the common bile duct and in the hepatic duct. A choledochotomy was done and the stone was removed. The patient seemed to be in good condition, but seven days later he had a hemorrhage from the operative wound. Notwithstanding efforts made to check the hemorrhage, it continued for three days. The condition of the patient was serious. Blood transfusions of 300 cc. and then of 80 cc. gave good results. Blood transfusion, in patients with biliary diseases, is advised to prevent postoperative hemorrhages. The patient recovered and when observed some time later had gained 20 Kg. (44 pounds).

Amebic Enteritis and Sudden Death: Ventricular Fibrillation: Emetine Poisoning.—Montes Pareja's patient, aged 26, one year and a half after an attack of dysentery, and when in apparent good health, was suddenly seized with an intense pain in the right hypochondrium. She also had fever (102.2 F.). An hepatic abscess was found. A 2 per cent solution of emetine hydrochloride was injected in varying doses, without exceeding 0.08 Gm. daily, in two injections, for two weeks. The abscess was punctured and 12 cc. of pus was aspirated. The reappearance of the pain in the right hypochondrium, after six days during which the emetine injections were stopped again, necessitated its use in doses of 0.04 Gm. daily, in two injections, for six days more. A total of 1.07 Gm. of emetine hydrochloride was given. The patient, twenty-six days after the onset of the disease, and in a complete period of regression exhibited symptoms of heart failure, and rapid and irregular pulse (very similar to that which is observed in the prefibrillation period of serious heart diseases), and suddenly died. The author says that during the two days before death, the patient was given twenty drops of digitalis. He points out that the clinical syndrome which in cardiac patients may be considered as a prefibrillation stage may be aggravated by digitalis and sudden death may occur from fibrillation.

Archiv für Verdauungs-Krankheiten, Berlin

45: 285-428 (June) 1929

*Treatment of Colitis Gravis by Blood Transfusion. H. Strauss.—p. 285.
*Decreased Secretion of Hydrochloric Acid and Ferments by Stomach. F. Delhougne.—p. 294.
Gastric Ulcer Problem. G. Kelling.—p. 322.
*Permanent Cure in Medical Treatment of Peptic Ulcer. K. Bahn and Rüschen.—p. 346.
*Value of Diet Consisting Exclusively of Raw Fruit and Vegetables. B. Süsskind.—p. 364.
*Blood Picture in Diseases of Stomach. D. A. Kogan.—p. 381.
*Influence of Diet on Secretion of Bile. O. Sawalischina.—p. 389.
Diets Used at Karlsbad During Past 400 Years. B. Molnár.—p. 395.
Medical Examination of Stool. E. Ebstein.—p. 409.

Treatment of Colitis Gravis by Blood Transfusion.—Strauss states that in a case of colitis gravis of several years' duration, he recommended surgical intervention but first gave the patient a blood transfusion because of his anemia and cachexia. Following the transfusion the patient's condition improved rapidly and operation became unnecessary. In two other patients with colitis gravis who had been treated by other methods without result, the author obtained marked improvement with transfusion of from 400 to 500 cc. of blood. The author believes that this form of treatment is indicated particularly in cases of colitis gravis in which severe anemia is present.

Decreased Secretion of Hydrochloric Acid and Ferments by Stomach.—In a clinical and experimental study of decreased secretion of hydrochloric acid and ferments by the stomach, Delhougne found that solid food (bread and meat) in the stomach adsorbs a relatively large amount of hydrochloric acid and ferments. The acid and the ferments are not chemically bound and can be recovered by expression. The amount of acid and ferments adsorbed in the gastric juice is greater in hypoacidity than in normal acidity and in hyperacidity. The amount of hydrochloric acid and ferments adsorbed in the gastric juice is inversely proportional to the surface tension, which can be modified parenterally (histamine and atropine). A relation between adsorption and osmotic pressure cannot be demonstrated. The viscosity and surface tension of the gastric contents run parallel. The greatest difference in concentration between gastric juice and solid food occurs in hypo-acidity.

Permanent Cure in Medical Treatment of Peptic Ulcer.—From their experiences in the treatment of 645 patients with peptic ulcer, Bahn and Rüschen conclude that in two thirds of all cases of this condition, permanent cure may be obtained by conservative treatment.

Value of Diet Consisting Exclusively of Raw Fruit and Vegetables, for Health Person.—Süsskind describes four dietetic experiments that he performed on himself. The results of these experiments show that an exclusive raw plant diet is unsuitable for man because on such a diet it is impossible to prevent loss of body weight despite a caloric intake in excess of the normal requirement.

Diagnostic Value of Blood Picture in Diseases of Stomach.—Kogan states that the morphologic examination of the blood can occasionally be of value in diseases of the stomach in which it is difficult to make a diagnosis clinically. The blood picture at times is an aid in the differential diagnosis between ulcer and cancer; in ulcer there is a tendency to polycythemia whereas in cancer there is a tendency to anemia. In both ulcer and cancer of the stomach lymphocytosis occurs.

Influence of Diet on Secretion of Bile.—In experiments on dogs with fistulas of the gallbladder and stomach, Sawalischina noted that the secretion of bile is subject to periodic variations. The kind of food eaten affects the formation of bile; various foods change both the quantity of bile secreted and its bilirubin content. Meat has a more marked cholagogue action than oatmeal soup. The bilirubin content of the hourly specimens of bile varies on a meat diet and on an oatmeal diet. The author was unable to demonstrate a characteristic difference in the activating property of the bile with regard to the lipase of the pancreatic juice on a meat diet and on an oatmeal diet.

Deutsche medizinische Wochenschrift, Berlin

55: 1073-1116 (June 28) 1929

The General Practitioner and Operative Obstetrics. G. Winter.—p. 1073.
*Dietetic Treatment and After-Treatment in Renal Calculus. G. von Pannewitz.—p. 1078.
Pharmaceutic Treatment of Multiple Sclerosis. F. Lachs.—p. 1080.
Clinical Observations in Industrial Poisoning with Arsenic Hydride. Van der Reis and H. Büssow.—p. 1081.
Pathogenesis and Treatment of Hallus Flexus. H. Timmer.—p. 1082.
New Method for Conservation of Amebas in Examination of Feces. O. Cherefeddin.—p. 1084.
Effects of Splenic Extracts on the Red Blood Cell Picture, Especially in Hyperglobulia. Nipperdey.—p. 1085.

*Large Doses of Sodium Salicylate in Treatment of Acute and Chronic Rheumatic Polyarthritis. J. T. Peters.—p. 1086.
Copper Treatment in Surgical Tuberculosis. A. Strauss.—p. 1087.
Detection of Anthrax-Like Bacilli in Impetigo Anthracoides. W. Richter and K. Walther.—p. 1089.
Intestinal Tumors. Enderlen.—p. 1092.

Dietetic Treatment and After-Treatment in Renal Calculus.—According to von Pannewitz, surgical removal is the only effective treatment for large renal calculi. Small calculi, however, may often be treated in a more conservative manner. For such cases the dietetic treatment is probably the most effective. The latter is also helpful in the after-treatment following an operation, because in many of these cases there exists a tendency to relapses. The author points out that in order to be able to prescribe effective dietary treatment, it is necessary to know the chemical composition of the various types of calculi. He describes a method by means of which it is possible to determine the type of the stone. Experiments proved that calculi which contain mostly urates are due to excessive acidity and should therefore be counteracted by alkalization of the organism. The author names foods and medicaments that effect this alkaline reaction. The formation of phosphatic calculi, however, is due to deficiency in uric acid, and whenever such calculi are found, it is necessary to prescribe foods and medicaments that will increase the acidity. Oxalate calculi have no relation to the acid-base equilibrium, and the effect of dietary treatment on these is consequently negligible. Nevertheless, patients who show a tendency to the formation of oxalate calculi should avoid foods that contain oxalates. The author asserts that a dietary treatment that is based on these principles will cause smaller stones to disappear, and it will prevent relapses following the surgical removal of larger calculi.

Large Doses of Sodium Salicylate in Treatment of Acute and Chronic Rheumatic Polyarthritis.—Peters states that patients with acute and chronic rheumatic polyarthritis should be given large doses of sodium salicylate. He points out that formerly they were given from 6 to 8 Gm. daily, 10 Gm. being considered the maximum dose. According to his prescription they receive 15 Gm. daily. A daily dose of 30 Gm. of sodium bicarbonate is given as an antidote. Ten times a day, at intervals of two hours, the patients receive 50 cc. of a solution composed of 30 Gm. of sodium salicylate, 60 Gm. of sodium bicarbonate, 300 Gm. of syrup of orange and sufficient cold distilled water to make 1,000 cc. The administration of larger doses of sodium salicylate not only is more effective, but, if given as prescribed by the author, causes less harmful effects than the smaller doses, which were usually administered without adequate neutralization. In many patients the appetite increased during the treatment. Such complications as albuminuria, dyspnea and salicylate intoxication never became manifest. When the large doses are administered during periods of fever the patient should be confined to bed, and the affected joints should be bandaged with cotton. After the fever and pains have completely disappeared, the patient should still remain in bed for about three days. The dose of sodium salicylate may then be reduced by giving the 50 cc. of the prescribed solution at intervals of four hours. The author asserts that in acute processes the large doses effect a quick cure. Endocarditis, which often complicates the rheumatic process, is also favorably influenced and often completely cured. Even in patients with chronic rheumatic polyarthritis complete recovery may occur.

Klinische Wochenschrift, Berlin

8: 1153-1200 (June 18) 1929

Encephalitis Following Vaccination. A. Eckstein.—p. 1153.
Absolute and Relative Predisposition to Various Communicable Diseases. H. Reiter.—p. 1158.
*Pyelography Following Intravenous Injection of a Mixture of Urea and Sodium Iodide. A. Roseno.—p. 1165.
*Hyperbilirubinemia in Gastric and Duodenal Ulcers. F. Reiche.—p. 1170.
*Duodenal Diverticulum and Gastric Ulcer. L. Zukschwerdt.—p. 1171.
*Influence of Sodium Nitrite on Blood Sugar. E. Herzfeld and R. Krüger. —p. 1174.
*Lambliasis as Cause of Gastric Disturbances. H. Teitge.—p. 1175.
Volvulus of Sigmoid Flexure in Father and Son: Racial Predisposition to Volvulus. T. Plaut.—p. 1177.
*Fermentative Action of Muscle of 3,000 Year Old Mummy. E. Sehrt. —p. 1177.
Sympathetic Nervous System of Patients with Catatonia and Its Modification by Pharmacologic Poisons. T. Gordonoff and F. Walther.—p. 1179.
Significance of Cholesterol in Experimental Staphylococcus Infection in Cats. W. Borchardt.—p. 1179.

Pyelography Following Intravenous Injection of a Mixture of Urea and Sodium Iodide.—Roseno describes a new method of pyelography in which large amounts of urea combined with sodium iodide are injected intravenously and are slowly eliminated by the kidneys. This method makes it possible to represent the uropoietic system in the roentgenogram much better than was possible with the older methods of pyelography. It is a combination of functional diagnosis of the kidney with the topographic-anatomic representation of the urinary passages. The functional test of the whole uropoietic system is made visible on the roentgenogram. The author gives a description of the technic of the test and the indications and contraindications for its application, and he discusses the symptomatology of various disturbances that may be detected with the aid of this method of pyelography.

Hyperbilirubinemia in Gastric and Duodenal Ulcers.—Reiche points out that several authorities have expressed diverse opinions concerning the increase in the bilirubin content of the blood in cases of gastric and duodenal ulcers. In making careful observations on 115 patients with gastric ulcer and on forty-one with duodenal ulcer, the author found that in cases of gastric ulcer hyperbilirubinemia occurs in about 10 per cent of the patients, whereas in duodenal ulcer it is present in more than 25 per cent of the cases. He comes to the conclusion that hyperbilirubinemia is not of practical value in the differential diagnosis between nervous disturbances of the stomach and ulcers, or between gastro-intestinal ulcers and cholecystitis.

Duodenal Diverticulum and Gastric Ulcer.—In a case of concurrence of two duodenal diverticula with a gastric and a duodenal ulcer, Zukschwerdt assumes the following correlation: The stagnating contents of the diverticulum stimulate gastric secretion at a time when no more food is present for the normal binding of the ferments. Clinical observations and experiments have revealed that such disturbances in the secretory system predispose to ulcer formation.

Influence of Sodium Nitrite on Blood Sugar.—Herzfeld and Krüger call attention to the fact that the majority of diabetic patients have high blood pressure. It has also been observed that persons with hypertension often show an increase in the blood sugar. In order to test the sugar content of the blood when the pressure is artificially lowered and the capillaries are temporarily dilated by sodium nitrite, the authors made experiments on rabbits, on healthy persons and on diabetic patients. Tabular reports show the results of these experiments. In animals as well as in healthy or diabetic persons, sodium nitrite effects changes in the sugar content of the blood. Tests that were made ten or twenty minutes after the injection showed that the blood sugar had decreased. After that, however, it rose considerably above the normal; that is, in excess of the quantity that was present before the injection.

Lambliasis as Cause of Gastric Disturbances.—In a miners' hospital in the Ruhr district, Teitge examined 110 patients with gastro-intestinal disturbances. His object was to determine how many were infected with *Lamblia intestinalis*. The examinations were made on freshly removed duodenal juice. It was found that 21 per cent of these patients had lambliasis. The condition of all these patients could be improved and cured by neoarsphenamine injections, provided the doses were not too weak. The gastric disturbances disappeared gradually with the decreasing number of parasites in the duodenal juice. When too small amounts were given the treatment was unduly prolonged and relapses occurred frequently. The author asserts that a dose of 0.9 Gm. of neoarsphenamine is always effective. However, so large a quantity should be given only in exceptional cases. In order to prevent relapses it is advisable not to discontinue the treatment immediately after all the lamblia have disappeared, but rather to extend them a little longer.

Fermentative Action of Muscle of 3,000 Year Old Mummy.—Sehrt first reviews the experiment of Hansemann, who succeeded in performing a typical precipitin test with an extract of muscle from a mummy. He then reports his own investigations on the fermentative action of an extract of muscle from a mummy. By combining the extract of the muscle with fresh beef pancreas, he demonstrated the glycolytic action of

the mummified muscle. When the macroscopic oxydase reaction was performed, the muscle of the mummy produced the same deep blue color as fresh muscle. These experiments prove that the precipitin test, glycolysis and the oxydase reaction are essentially the same with muscle from 3,000 year old mummy and with fresh muscle.

Medizinische Klinik, Berlin

25: 1011-1048 (June 28) 1929

Action of Renal Extracts on Functional Disturbances in Contracted Kidney. K. Stejskal.—p. 1015.
Nonspecific Protein Anaphylaxis and Heterogenetic Tuberculin Sensibility in Diphtheria. E. Hoke.—p. 1016.
*Gastro-Intestinal Disturbances Following Reducing Cures. L. von Friedrich.—p. 1017.
Carbon Monoxide Poisoning Caused by Welding in Closed Pipes. H. Haegele.—p. 1019.
Cosmetic Surgery of Mamma. F. Halla.—p. 1020.
Therapeutic Results of Transfusion of Blood from Convalescent Patients. J. Clemens.—p. 1021.
Value of Guttadiaphot Method in Diagnosis of Syphilis. V. Schilling. —p. 1022.
Idem. G. Blumenthal and T. Saito.—p. 1024.

Gastro-Intestinal Disturbances Following Reducing Cures.—Von Friedrich reports the cases of four women, aged between 30 and 37, who took reducing cures without the advice or supervision of a physician. Two of these women not only were on a strict diet but also took large amounts of purgatives in the form of teas and pills containing aloes, rhubarb or senna. All four women developed gastro-intestinal disturbances. The symptoms were diarrhea, constipation and abdominal pains. The latter were localized on the right side and radiated toward the back. In one patient gastric achylia developed, and all of them had colitis. The author assumes that these conditions were caused by the irritating influence of the purgatives and by the change in the intestinal flora, the latter being due to the change in foods. Disturbances in the internal secretions are another possible cause.

Münchener medizinische Wochenschrift, Munich

76: 1075-1116 (June 28) 1929

Prevention of Acute Heart Failure. P. Morawitz and M. Hochrein.—p. 1075.
Clinical Aspects and Pathologic Conditions in Generalized Osteosclerosis Fragilis. F. Reiche.—p. 1078.
Significance of Pyretotherapy in Treatment of Dementia Praecox. Menninger-Lerchenthal.—p. 1080.
*Immunization Against Tuberculosis. M. Beck.—p. 1082.
Pathogenesis of Diabetes. C. Funck.—p. 1083.
Experiences with Sachs-Witebsky's Citochol Reaction. W. Gross.—p. 1085.

Prevention of Acute Heart Failure.—Morawitz and Hochrein state that in 1927 there were at the medical clinic in Leipzig forty-three cases of acute heart failure. In twenty-four instances death occurred within a few seconds in spite of a good compensatory circulation. In the remaining nineteen cases marked decompensation existed. The authors think that in nearly all these cases death was due to fibrillation of the heart. In order to prevent acute heart failure, or at least to reduce the number of fatalities due to it, they instituted prophylactic treatment with quinidine. During 1928, nearly all patients with cardiac disease who showed a tendency to fibrillation were given 0.1 Gm. of quinidine twice daily. Other necessary treatments were continued simultaneously. The number of fatalities in 1928 due to acute heart failure were reduced to nineteen. Only six of these patients had received the quinidine treatment. In the remaining cases the prophylaxis had not been carried out, either because the patients died shortly after their arrival at the clinic or because their serious condition required other treatment. In some instances the tendency to fibrillation had not been recognized. In five of the nineteen cases death occurred within a few seconds, in spite of a compensated circulation. In only one of these cases had the patient received quinidine. The authors think that the results obtained with this prophylaxis justify its general application for all those patients who are in danger of acute heart failure. These are particularly the persons with coronary sclerosis. Patients who received 0.2 Gm. of quinidine daily for several months never showed harmful effects. This prophylaxis may also be carried out on ambulatory patients.

Immunization Against Tuberculosis.—Beck's immunization experiments were based on the theory that, by cultivation of highly virulent tubercle bacilli, cultures could be developed which would not cause tuberculosis but would effect a cure and immunization against tuberculosis. The author succeeded in incorporating the tubercle bacilli in an ointment that did not cause irritation. The tubercle bacilli employed for these experiments were cultivated from the sputum of a man. Tests were made on several groups of animals. They were first inoculated with a sodium chloride solution containing highly virulent bacilli. Following the development of tuberculosis, they were given repeated inunctions with the specially prepared ointment. Several months later they were killed, but lesions of tuberculosis were not found. The control animals, however, had either died of tuberculosis or showed tuberculous processes at necropsy. One group of animals received prophylactic treatment with the ointment of tubercle bacilli. Later these animals were inoculated with a highly virulent strain of bacilli. They were killed several months later, and all were free from tuberculosis, whereas the control animals had died of tuberculosis within six weeks. Inunctions with this ointment in healthy persons did not show any harmful results. The preparation is now being tested in tuberculous patients.

Strahlentherapie, Berlin

33: 1-198 (June 29) 1929

Time Factor in Biologic Action of Roentgen Rays. A. Liechti.—p. 1.
Action of Roentgen Rays on Reticulo-Endothelial System: Its Relation to Roentgen Intoxication. A. Schönig.—p. 55.
Effect of Roentgen Irradiation on Oxidation: Carbon and Oxidation Factors in Urine of Irradiated Animals. H. Kubo.—p. 70.
Results of Roentgen Therapy in Carcinoma of Uterus. A. Döderlein. —p. 89.
*Effect of Roentgen Therapy in Adeno-Epithelioma of Uterus. A. Lacassagne.—p. 91.
*Radium Irradiation as Curative Treatment of Carcinoma of Cervix. W. Lahm.—p. 97.
Treatment of Carcinoma of Uterus. F. von Mikulicz-Radecki.—p. 120.
*Value of Roentgen Therapy in So-Called Inoperable Tumors. H. Holfelder.—p. 131.
Dosage and Hardness of Roentgen Rays for Treatment of Malignant Neoplasms. F. Bardachzi and R. Epstein.—p. 139.
*Roentgen Therapy of Climacteric Disturbances. J. Borak.—p. 142.
*Effect of Roentgen Irradiation on Acute Inflammatory Processes. F. Pordes.—p. 147.
Roentgen Therapy of Acute Otitis Media. R. Goldmann.—p. 152.
New Apparatus: Metalix Therapy Tube. H. Cramer and A. Borm.—p. 156.
New Apparatus for Use in Connection with Metalix Therapy Tube. C. Fried.—p. 160.
Correct Dosage of Roentgen Rays with Sabouraud Dosimeter. T. C. Neeff.—p. 169.
Dosage and Technic of Roentgen Therapy in Dermatology. G. H. Schneider.—p. 181.
Therapeutic Value of Red Rays as Measured by Hemogram. H. Cramer and G. Fechner.—p. 186.
Effect of Cathode Rays on Erythrocytes. W. Hausmann and I. Žakovsky. —p. 196.

Effect of Roentgen Therapy in Adeno-Epithelioma of Uterus.—Lacassagne discusses the problem of diagnosis in carcinoma of the cervix uteri. Histologically, these adeno-epitheliomas are similar to those of the corpus. However, in the former one may observe a secretion of mucus, a tendency of the tubular glands to form lobules, a diversity of the glandular cell elements and a tendency to stratification through proliferation toward the lumen. Roentgen therapy in thirty cases gave only 16 per cent response to treatment, whereas in corpus carcinoma 29 per cent appeared cured within the same period.

Radium Irradiation as Curative Treatment of Carcinoma of Cervix.—In the curative treatment of carcinoma three stages may be distinguished: (1) the cytolethal injury or destruction of the carcinoma cells; (2) their elimination, and (3) the repair of the resulting defects. Operation for carcinoma of the cervix uteri being limited on account of the proximity of many vital organs and the possibility of bacterial infection, radium irradiation is therefore indicated. The production of eosinophils—an important factor in the resorption of the destroyed carcinoma cells—is increased. Restitution of the portio often goes hand in hand with the process of destruction of carcinoma cells. Lahm discusses the effective dose, which agrees with the Lazarus triphase treatment of cancer of the tongue and mouth. He stresses the value of disseminated

irradiation. The French and Swedish methods give almost identical results. The optimum dose for cancer of the cervix would be about 110 per cent of the unit skin dose, though in a number of cases even higher doses may be indicated.

Value of Roentgen Therapy in So-Called Inoperable Tumors.—Holfelder reports two cases of so-called inoperable carcinoma of the stomach in which roentgen treatment was used. Exploratory laparotomy disclosed a hard nonresectable tumor in the stomach of the first patient. The patient received roentgen irradiation and showed such improvement after one year of treatment that resection of the tumor could be performed. Two and one-half years afterward the patient was still free from recurrence. In the second case, in which a diagnosis of inoperable cancer had been made on the basis of the roentgen examination, the patient received roentgen irradiation, following which her condition improved and she could resume her occupation. Two years later she died of pneumonia. The necropsy did not disclose visible signs of carcinoma. On the basis of his experience, Holfelder advocates roentgen therapy, with his dosage, in cases of inoperable carcinoma of the stomach.

Roentgen Therapy of Climacteric Disturbances.—The Vienna school originated the treatment of disturbances of the climacteric by roentgen irradiation of the pituitary body or thyroid. According to Borak the average clinical success in all countries which have taken up this treatment is 75 per cent when irradiation of the pituitary body was given, and 85 per cent when irradiation of the pituitary body was combined with irradiation of the thyroid. The author gives a weak dose (one-third unit skin dose) over three fields every third day and repeats this treatment according to need within from two to four weeks. In all climacteric disturbances, especially those which resist medication or other treatment, Borak advocates the early use of roentgen irradiation.

Effect of Roentgen Irradiation on Acute Inflammatory Processes.—Pordes distinguishes two types of results in roentgen irradiation of inflammatory processes. In the one, involution within a few days has taken place; in the other a series of small foci may develop. Infections that are of recent date react more favorably than older ones. The retrogression of the inflammation or abscess may complicate the indications for surgical action.

Zentralblatt für Chirurgie, Leipzig

56: 1473-1536 (June 15) 1929

Artificial Eradication of Veins: Experimental Study. E. Schwarz and M. Ratschow.—p. 1474.
Operation for Luxation of Peroneal Tendon. F. Mandl.—p. 1478.
Esophagoplasty: Use of Skin Flap Raised from Thorax. M. J. Charschak.—p. 1480.
Closed Operation for Acute Empyema. G. Dardel.—p. 1484.
*Ramisection in Cervical Region; New Technic. J. Sánchez y Cózar.—p. 1488.
Suppurative Peritonitis Following Abdominal Puncture in Case of Tuberculosis of Peritoneum. T. Canaan and E. Gmelin.—p. 1493.
Dangers of Rectal Anesthesia with Paraldehyde. F. Starlinger.—p. 1495.

Technic of Ramisection.—To insure having severed all the rami, Sánchez y Cózar performs what he terms a periradicular ramisectomy. He removes or strips the adventitia from the nerve root from its bifurcation to the foramen. Thus, not a branch is overlooked and the success of the operation is insured.

Zentralblatt für Gynäkologie, Leipzig

53: 1425-1488 (June 8) 1929

*Roentgen Cancer of Abdominal Wall. O. Polano.—p. 1426.
*Plastic Closure of Vesicovaginal Fistula. G. Hromada.—p. 1431.
Cystoscopic Lithotripsy. B. Ottow.—p. 1434.
Surgical Needle as Foreign Body in Bladder. B. Ottow.—p. 1444.
Cesarean Section in Chronic Fibrous Periurethritis. R. Stiglbauer.—p. 1450.
*Inversion of Ureter. A. Mayer.—p. 1452.
Absence of One of Müller's Ducts. F. Michel.—p. 1457.
*Hypernephroma Metastases in Vagina. C. Fleischmann.—p. 1458.
*Ileus in Pyelitis Gravidarum. F. C. Hilgenberg.—p. 1459.
*Idem. W. Stoeckel.—p. 1462.

Roentgen Cancer of Abdominal Wall.—Polano reports a case of roentgen cancer that developed in the abdominal wall in a woman fourteen years after the appearance of a roentgen ulcer following irradiation of the uterus for myoma. The case is interesting both because of the long latent period between the time of appearance of the ulcer and the time of appearance of the cancer and because the cancer invaded the bladder and produced a vesical fistula.

Plastic Closure of Vesicovaginal Fistula.—Hromada describes a method of plastic closure of vesicovaginal fistulas which resembles the Andrews operation for inguinal hernia. In it the floor of the bladder is doubly reinforced by means of two lateral flaps of vesicovaginal fascia.

Inversion of Ureter.—Mayer reports a case of inversion of the lower end of a bladder in a woman, aged 21. The inversion had been caused by traction exerted on the ureter by a large pedunculated polyp taking origin from its inner wall near the bladder.

Hypernephroma Metastases in Vagina.—Fleischmann reports a case of hypernephroma in a woman, aged 45, in which metastases in the vagina brought the patient to the physician three months before symptoms of the primary tumor in the kidney were noted.

Ileus in Pyelitis Gravidarum.—From the study of a case of ileus in a woman with pyelitis gravidarum, Hilgenberg believes that in such cases the paralysis of the intestine is caused by an injury to its wall resulting from inflammatory processes in the retroperitoneal space.

Ileus in Pyelitis Gravidarum.—Stoeckel believes that ileus in pyelitis gravidarum is caused not by inflammation in the retroperitoneal space but by a toxemia resulting from compression of the ureters by the gravid uterus.

Hospitalstidende, Copenhagen

72: 605-632 (June 6) 1929

Results of Treatment of "Pure" Otogenic Meningitis. R. Schroeder.—p. 605.
*Investigations on Basal Metabolism in Patients with Cancer of Alimentary Canal, with Special Regard to Symptoms of Loss of Weight and Exhaustion. S. A. Holbøll.—p. 615.

Investigations on Basal Metabolism in Patients with Cancer of Alimentary Canal, with Special Regard to Symptoms of Loss of Weight and Exhaustion.—Holbøll found loss of weight and exhaustion in nearly all of fifty-seven cases of cancer of the alimentary canal, whereas digestive symptoms were absent in about one fifth of the cases. In sixteen out of nineteen cases, the basal metabolism was increased.

Hygiea, Stockholm

91: 417-464 (June 15) 1929

*Structure and Functions of Cerebral Cortex. S. E. Henschen.—p. 417.

Structure and Functions of Cerebral Cortex.—Henschen discusses the development of knowledge of the structure of the cerebral cortex and its importance in research on the functions of the brain and reviews the investigations on the nature and localization of the different functions, with special attention to Cajal's work.

Norsk Magasin for Lægevidenskapen, Oslo

90: 553-712 (June) 1929

Eclamptic Kidney, Especially from Pathologic-Anatomic Point of View. S. Kjelland-Mørdre.—p. 553.
Erythema Nodosum of Tuberculous Origin. J. Heimbeck.—p. 566.
Thirty-Nine Cases of Tumor of Lung. P. Gellein.—p. 569. C'cn.
Breech Presentation with Special Regard to Prognosis and Treatment. G. Schaanning.—p. 617.
*Chondropathy of Patella (Fründ) with Notable Roentgen Changes. H. Støren.—p. 669.

Chondropathy of Patella (Fründ) with Notable Roentgen Changes.—Although the roentgenogram in Støren's case, previously diagnosed as tuberculosis of the knee joint, agreed with the picture of Haglund's "hintere Patellarkontusion," operation revealed the pathologic-anatomic changes of Fründ's chondropathy of the patella. Changes like those noted in Haglund's picture were also seen on roentgen examination of the other knee, which gave slight clinical symptoms. The knees had not been traumatized. The author thinks that Haglund's "hintere Patellarkontusion" may be an anomaly without pathologic significance. The case is an example of immobilization as an important factor in the development of considerable calcium atrophy and of the need of caution in the diagnosis of tuberculosis in such cases.